THERN GAS ASSOCIATION ISSUE

96th year

MAY 1955
Vol. 182 — No. 5

AMERICAN Gas Journal

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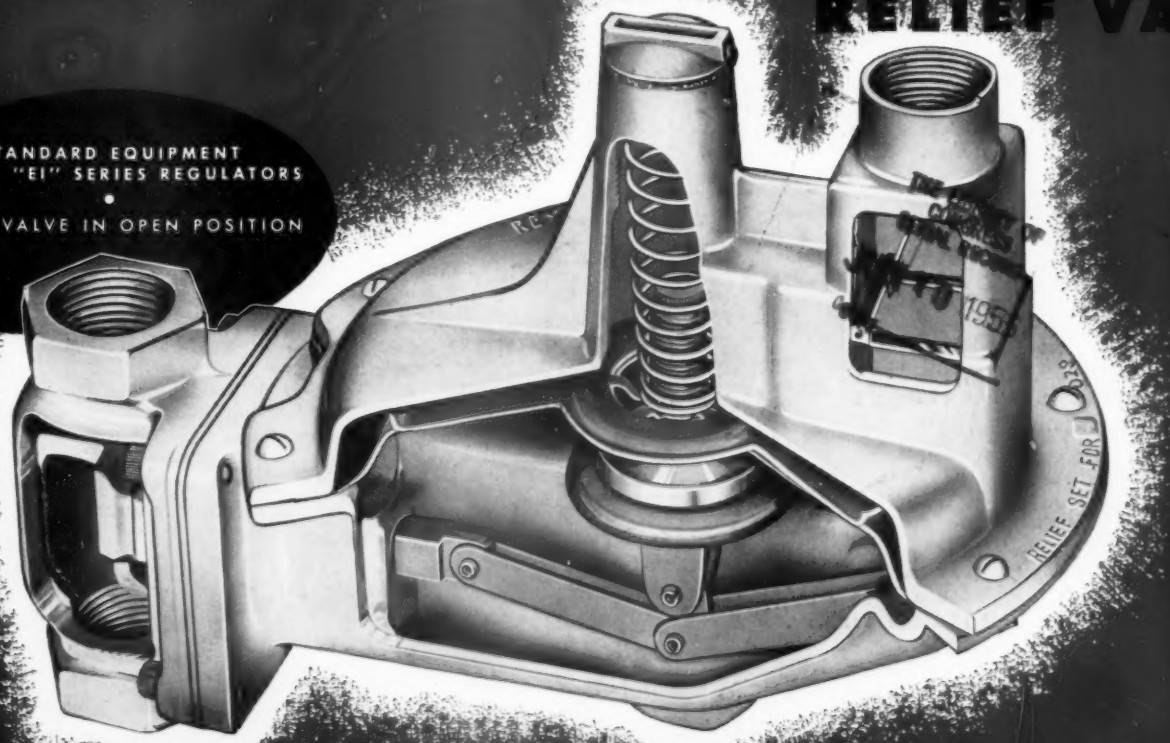
JUN 1 -- 1955
SMITHSONIAN DEPOSIT

REYNOLDS
offers a new unique
INTERNAL
RELIEF VALVE

STANDARD EQUIPMENT
ON ALL "EI" SERIES REGULATORS
•
RELIEF VALVE IN OPEN POSITION



Patent Pending

Reynolds new vent capacity relief valve has four features in design that make it interchangeable for older models and incorporate unusual performance. These features follow: Reynolds' ability to design modern service regulators for close regulation without the use of a small loading tube or restriction to the diaphragm chamber. A new type of rubber relief valve disc, so that a double action sealing effect permits the use of a large relief valve orifice which still seals and relieves within close regulation. Also available as a conversion kit. An automatic quick opening flapper designed for one square inch opening for excess pressure gas and yet has the standard small vent opening for normal regulation. This automatic vent, of all stainless steel construction, also eliminates the high shock-lock off experienced in other type regulators with small or restricted vent openings. The normal vent opening and the relief valve opening are the same, thereby eliminating compact vent piping for indoor installation or two weather caps for outside installation.

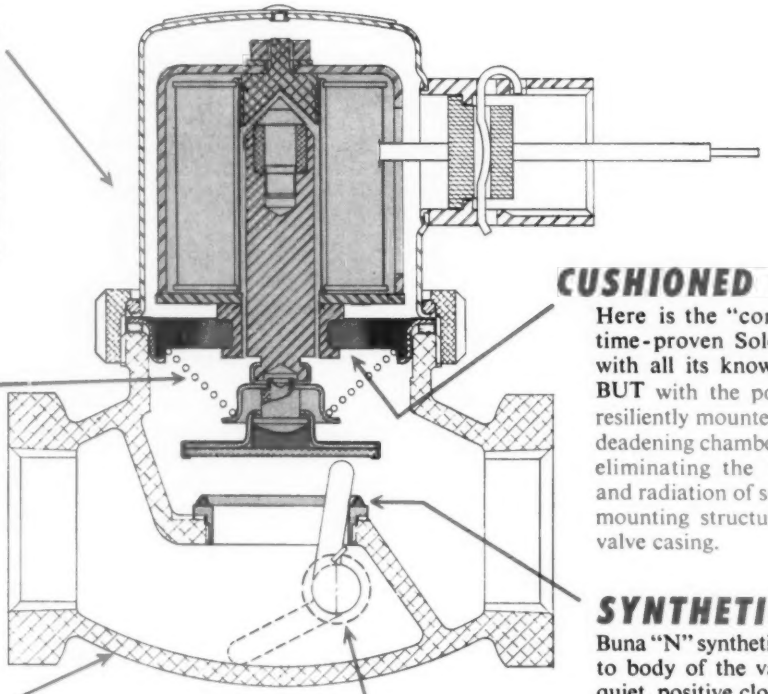
GAS CONTROL SINCE 1892

REYNOLDS GAS REGULATOR COMPANY
Anderson, Indiana, U. S. A.

Completely new "Cushioned Power" White-Rodgers Solenoid Valve is radically different—here's why—

AMAZINGLY QUIET

Resilient-mounted coil, sound-deadening cover and "soft-seat" construction provide, for the first time, really QUIET operation in a solenoid valve. Such quietness, plus its small overall dimensions and high capacities, make these valves ideal for use on all types of gas-heating installations.



CUSHIONED POWER

Here is the "conventional," time-proven Solenoid Valve, with all its known reliability, BUT with the power element resiliently mounted in a sound-deadening chamber, practically eliminating the transmission and radiation of sound to pipe, mounting structure and outer valve casing.

SPRING LOADED

Closing of the valve is aided by a compression spring, giving increased seat pressure when closed—makes this valve uncritical as to mounting position. No leveling necessary.

SYNTHETIC SEAT

Buna "N" synthetic seat bonded to body of the valve provides quiet, positive closure.

ALUMINUM BODY

The new White-Rodgers Solenoid Valve bodies are now made of aluminum alloy—thus all parts in contact with gas are aluminum or stainless steel, non-corrosive to all gases.

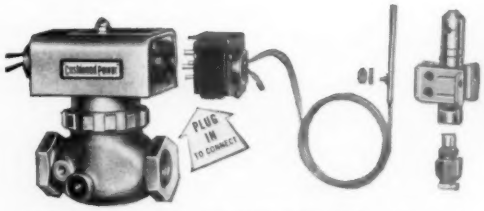
EASY-TO-USE MANUAL OPERATOR

Available with or without manual operator, conveniently located at side, easy-to-use knob type for use when current is not available.

Pressure rating ½ psi. Available in ½", ¾" and 1" sizes, for 25v. or 115v.

IN ADDITION to these improved performance features, multiple thermostat inventory is eliminated thru advanced design that permits a current reduction from .8 to .4 amps., thus unifying ALL White-Rodgers equipment for use with a single standard heat-anticipated thermostat.

Complete information on these new valves is available now. Write today for this data so that you may be fully informed on this radically new departure in Solenoid Valves.



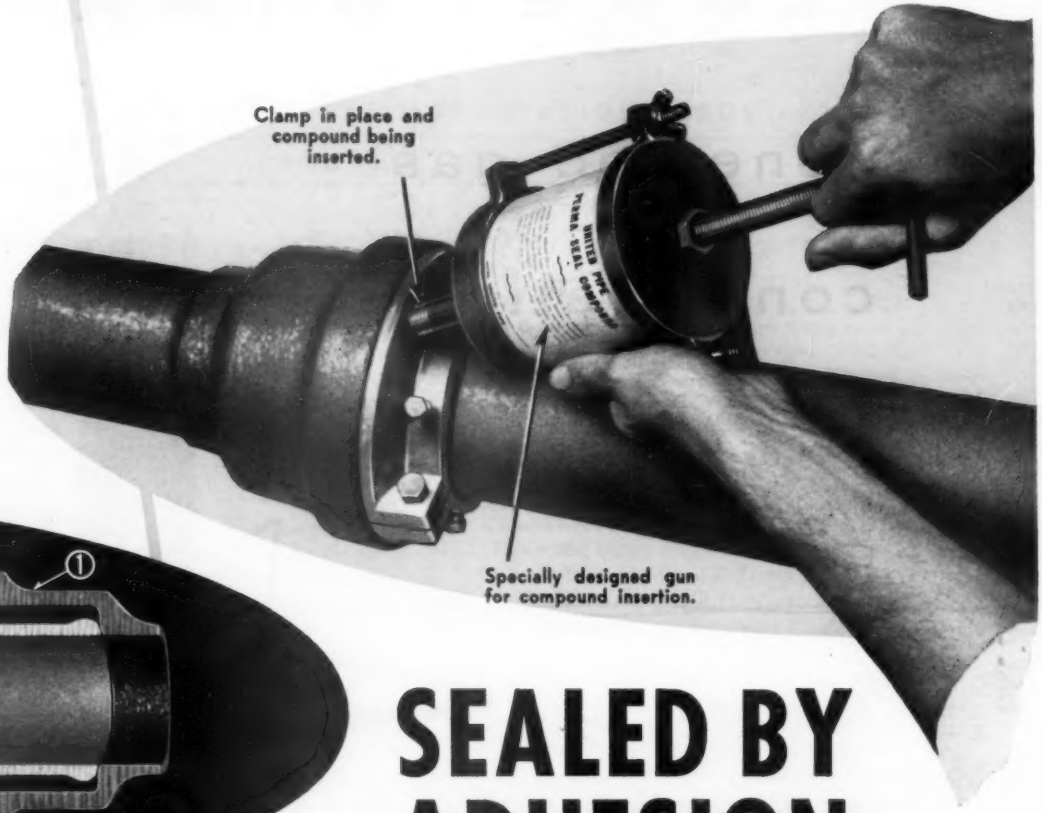
"Plug-In" Valve-Pilot Combination

The same sturdily constructed, quiet "Cushioned Power" valve is available with receptacle for "Plug-in" type White-Rodgers automatic pilots.

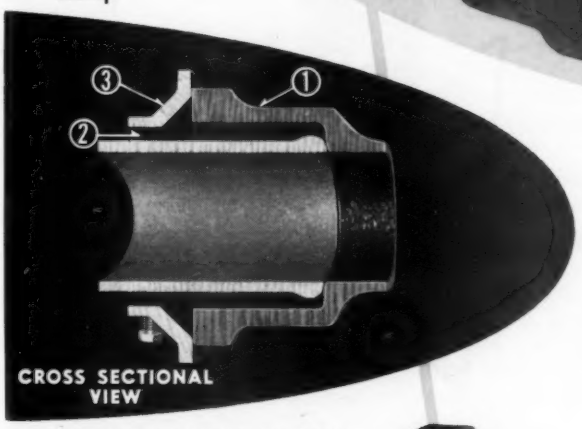
WHITE-RODGERS
Controls FOR HEATING · REFRIGERATION AND AIR CONDITIONING

ST. LOUIS 6, MO.

Simplified Bell Joint Clamps



1. Bell joint
2. Perma-Seal Compound
3. Bell joint clamp



SEALED BY ADHESION

WITH PERMA-SEAL COMPOUND

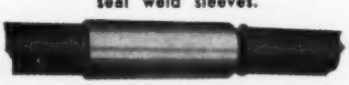
WITH THE FOLLOWING ADVANTAGES:

- Smaller street openings required because no excavating or cleaning necessary in back of the bell.
- The clamp does not require adjustment, or filling and facing of the bell.
- ***The clamp is engineered to fit all variable pipe wall thicknesses without adjustment and to fit all types of bell joints including sleeves, drip pots, valves and odd size pipes.*** Available sizes: 3" to 36" diameter.
- This clamp fits in confined areas because it requires no greater area than the existing bell for installation.
- ***This leak clamp becomes a seal by adhesion rather than by compression.***
- This clamp allows ground movement and vibration to take place without the danger of leaks after installation.
- Once installed the joint becomes trouble-free and permanent.

Write: for full information and prices about the Newest Method in Pipe Connections

New Perma-Seal and Safety Seal Weld sleeves available for steel to steel, steel to cast iron, split sleeves for repair of steel pipe, and completely insulated sleeves for corrosion control.

Typical installation in the removal of valve and replaced with safety seal weld sleeves.



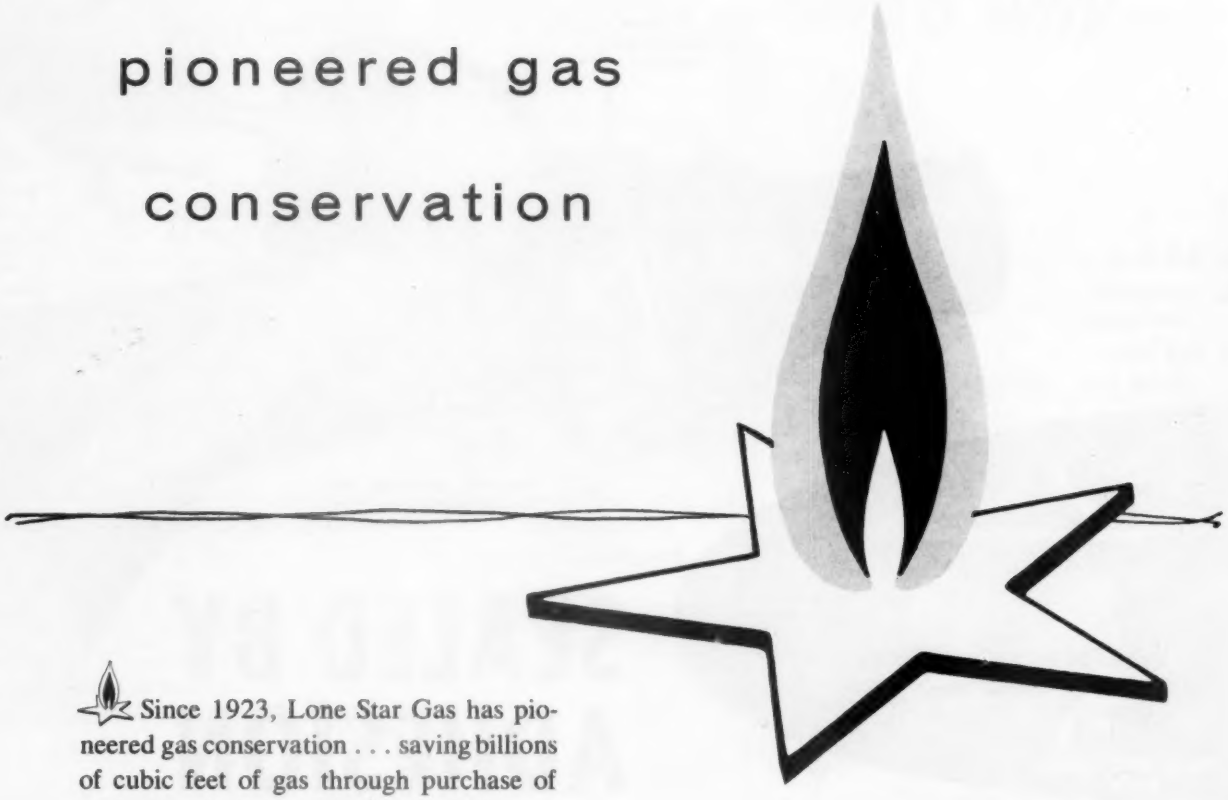
Steel to steel sleeve

Cast to cast sleeve

UNITED PIPE UTILITY SUPPLIERS, INC. BOX 777, BELOIT, WISCONSIN

LONE STAR

pioneered gas conservation



Since 1923, Lone Star Gas has pioneered gas conservation . . . saving billions of cubic feet of gas through purchase of casinghead and residue gas. This gas might otherwise have been flared and wasted. Due to this effort, the area economy has improved, producers have benefited, and consumer supply of gas has been increased.

Casinghead and residue gas today amount to 65% of all gas distributed by Lone Star.

Mr. D. A. Hulcy, President, sincerely sums up this attitude, "We at Lone Star like to feel that our company has made some contribution to the economy of the oil and gas industry and to all the people of Texas by utilization of a resource that otherwise might be wasted."

LONE STAR GAS COMPANY

DALLAS, TEXAS

AMERICAN
Gas Journal

SOUTHERN GAS ASSOCIATION ISSUE

VOLUME 182 | 96TH YEAR : : MAY 1955 | NUMBER 5

This month...

COMMUNICATIONS IN UTILITY OPERATIONS are expanding in use of radio and pulse-time functions, for speed, efficiency and economics. Mississippi Valley Gas Co. exemplifies many utilities, with applications of 2-way radio and telemetering. Looking to the future, this gas company has provided for relatively-simple additions of remote control functions. Page 24.

LEAKS AND THEIR DANGERS to persons, property and profits are too well known by gas companies to require amplification. Stuart B. Eynon returns to our pages, with his authoritative views on detection methods, and observes that not all gas blasts are properly chargeable to gas companies. Page 27.

INDUSTRIAL SALES MANPOWER problems were chased to the fore during the American Gas Association conference on industrial and commercial sales, in Boston last month. One panel presented policies and procedures followed by 3 companies represented, in selection and training, to show how this important consideration in gas sales can be handled. Page 36.

THE ALL-GAS KITCHEN, vital for its load-building and load-protecting qualities, and its irreplaceable promotional value, seems now to be getting well-planned and aggressive protection on the refrigerator front — so long in a state of delicate balance. With no small enthusiasm, we report recent meetings of Servel management and utility executives. Page 55.

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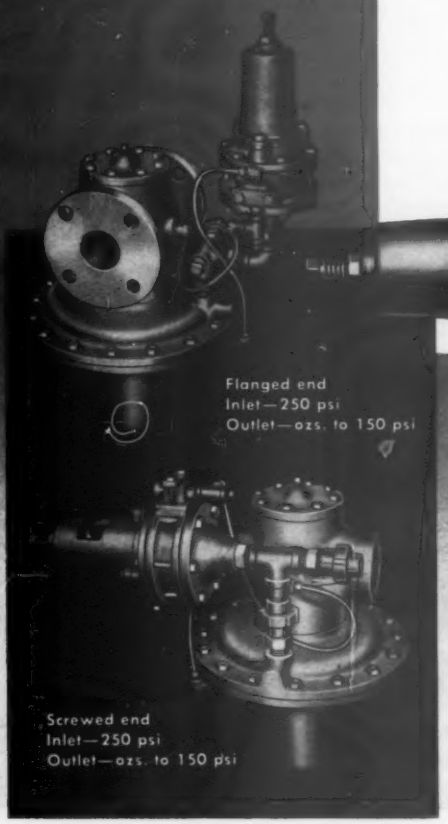
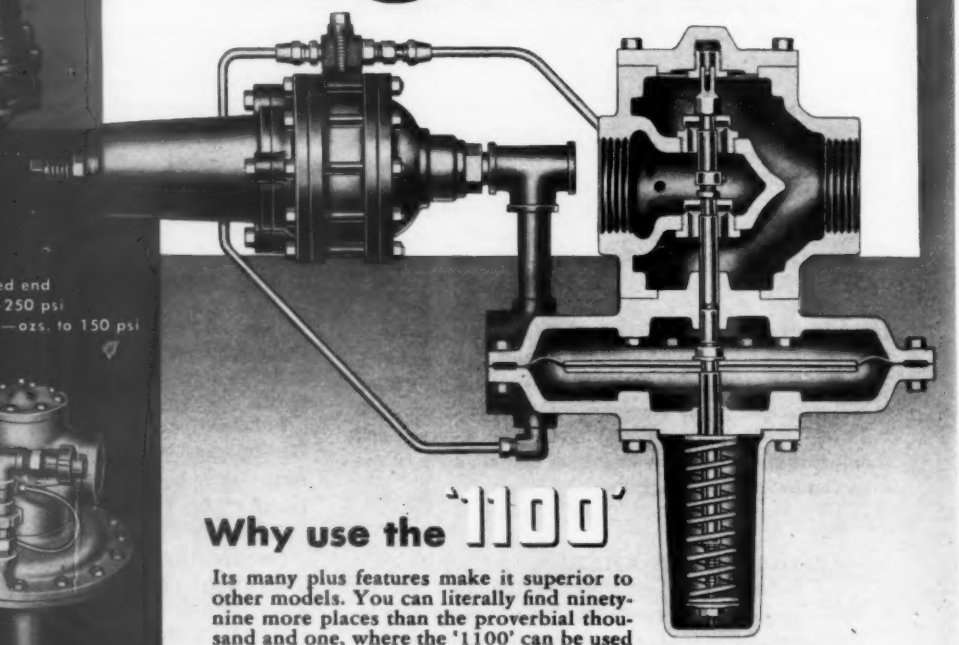
Chaplin-Fulton

why? '1100' regulator





Why use the '1100'

Its many plus features make it superior to other models. You can literally find ninety-nine more places than the proverbial thousand and one, where the '1100' can be used to advantage.

One basic assembly-2"—screwed or flanged.

- **WIDER APPLICATION**—inches water to 150 psi controlled pressure—means less different types to stock and service.
- **GREATER CAPACITY**—balanced valve construction passes 114,000 CFH at 100 psi to ounces—replaces larger costlier regulators to reduce cost of whole installation.
- **PROVEN PERFORMANCE**—straight line control from minimum to maximum flow. Stable operation on quick changing loads, or with on-and-off controls. Fast low lock-up on zero flow.
- **SIMPLER CONSTRUCTION**—no intricate parts or delicate adjustments. All wearing parts easily replaced. Regulator or pilot can be serviced without disturbing the other.
- **EASIER INSTALLATION**—compact design requires little space for installation in any position. Just place in line and make one connection from regulator to outlet line.

ACCURATE CF MFG CO DEPENDABLE

Chaplin-Fulton
MANUFACTURING COMPANY
Pittsburgh 25, Pennsylvania

Bulletin 1100 with complete information sent on request.

54-1100

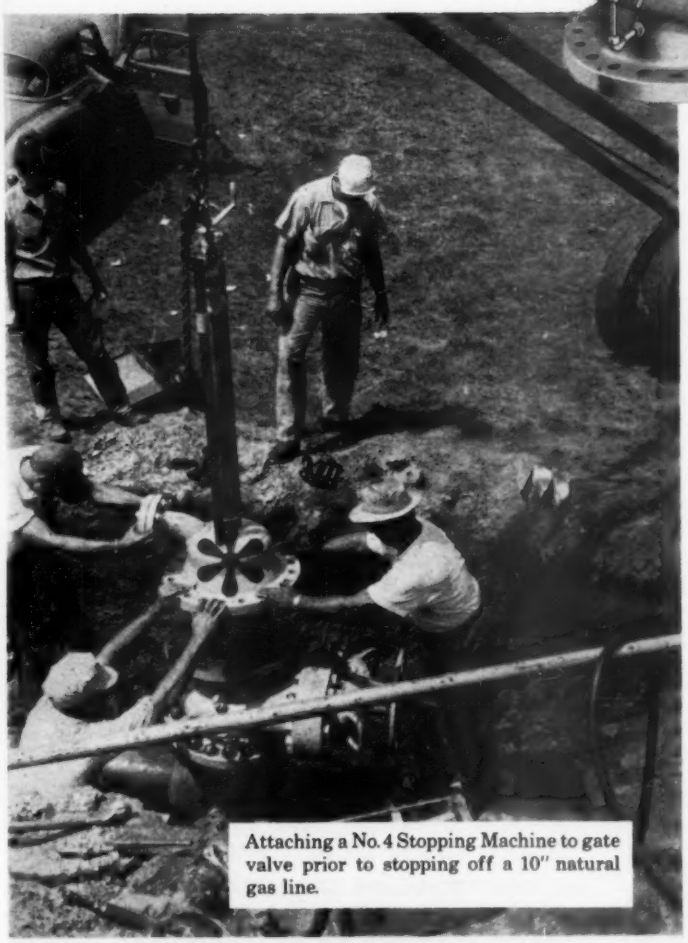
Congratulations to Southern Gas Association

MUELLER

No.4
LINE STOPPER UNIT

NO-BLO

* H-17440 LINE STOPPER UNIT
For 10" and 12" Steel Pipe
Max. Working Pressure – 500 p.s.i. at 100° F
Max. Working Temperature – 250° F at 375 p.s.i.



Attaching a No. 4 Stopping Machine to gate valve prior to stopping off a 10" natural gas line.

RELOCATE OR REPAIR 10" AND 12" LINES SAFELY WITHOUT INTERRUPTING SERVICE

The Mueller No.4 Line Stopper Unit makes it possible to completely isolate a section of line while continuing service through a temporary by-pass. The isolated section may then be repaired, removed or abandoned and the new line tied in.

All stopping-off operations are accomplished under pressure with no blowing of gas or interruption of service.

Contact your Mueller Representative, consult your G-97 Gas Catalog or write direct for complete information.

MUELLER CO.

Dependable Since 1857

MAIN OFFICE & FACTORY DECATUR, ILLINOIS

MUELLER®

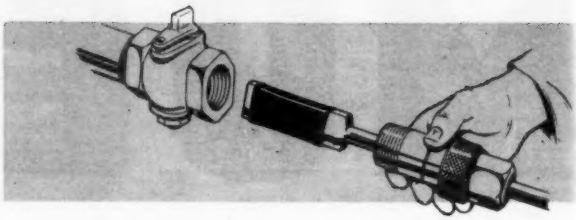
NO-BLO

Method

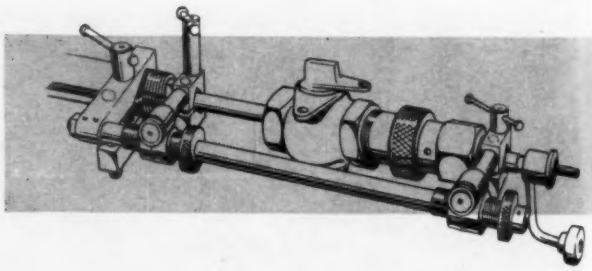
with the H-17010 STOP CHANGER

REPLACES GAS STOPS SAFELY...

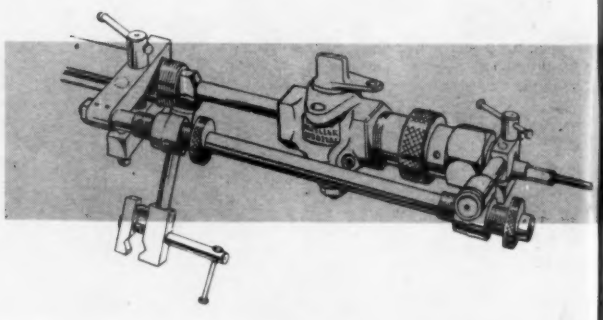
This is another of a series showing the broad application of Mueller No-Blo Machines and Fittings.



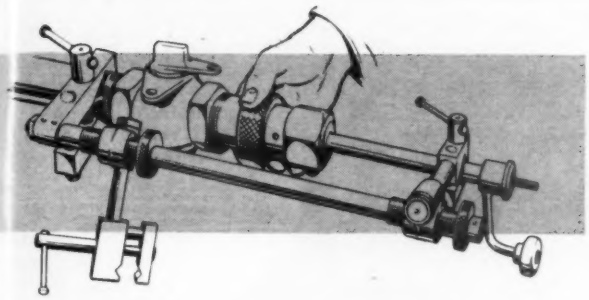
STEP 1. ATTACH STOP CHANGER TO OLD STOP
CLOSE STOP. REMOVE HOUSE PIPING FROM OUTLET AND ATTACH NO-BLO STOP CHANGER.



STEP 3. UNSCREW OLD STOP
UNSCREW OLD STOP AND SLIDE TO REAR OF SHAFT. TIGHTEN FRONT CLAMP ON SHAFT. (NOTE: THREADED SLEEVES POSITION SAFETY CLAMPS.)



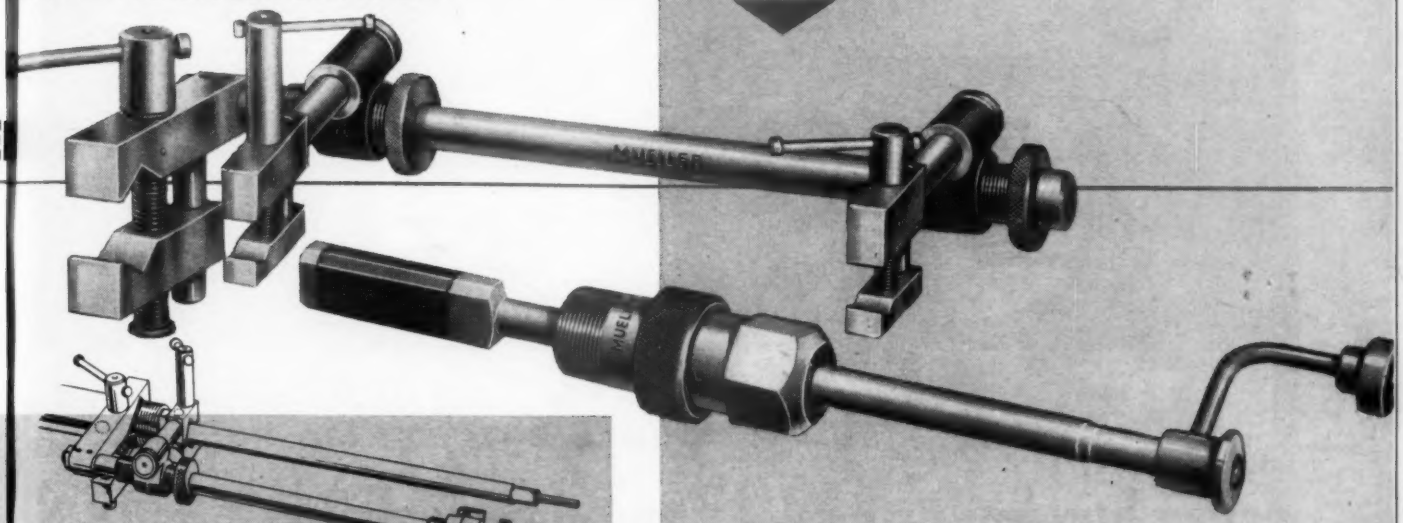
STEP 5. SLIDE NEW STOP ONTO SHAFT.
SCREW PRESSURE CHAMBER ONTO NEW STOP AND SLIDE ONTO SHAFT. TIGHTEN REAR CLAMP ON SHAFT. RELEASE FRONT CLAMP.

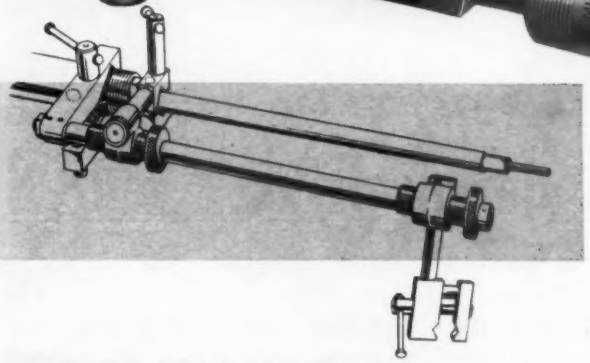


STEP 2. INSERT AND EXPAND STOPPER.

ATTACH SAFETY CLAMP TO PRESSURE PIPING. OPEN STOP AND INSERT STOPPER. TIGHTEN REAR CLAMP ON SHAFT AND EXPAND STOPPER. TEST FOR TIGHT SHUT-OFF BY SLIDING "O" RING COLLAR FORWARD TO EXPOSE TEST HOLE.

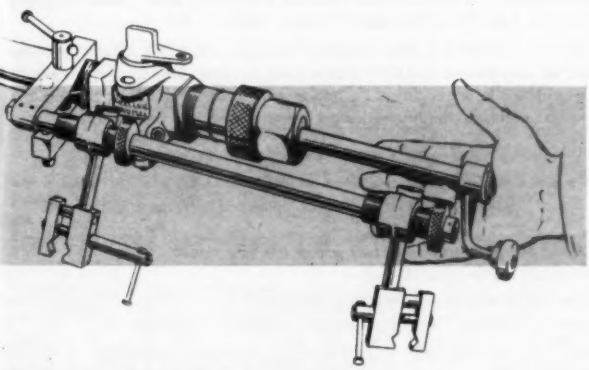
The Mueller H-17010 No-Blo Stop Changer is designed for use on ¾", 1" or 1¼" Stops with individual plugging units for each size and one safety clamp for all three sizes. It allows either straight way or round way stops to be replaced in the No-Blo manner under pressures to 125 p.s.i.g.





STEP 4. REMOVE OLD STOP.

RELEASE REAR CLAMP. REMOVE STOP AND PRESSURE CHAMBER FROM SHAFT. (FRONT CLAMP HOLDS STOPPER IN POSITION.)



STEP 6. INSTALL NEW STOP.

SCREW NEW STOP ONTO PIPE. RELEASE STOPPER AND WITHDRAW THROUGH STOP. CLOSE STOP, TEST FOR LEAKS AND REMOVE NO-BLO STOP CHANGER. CONNECT HOUSE PIPING AND OPEN NEW STOP TO COMPLETE INSTALLATION.

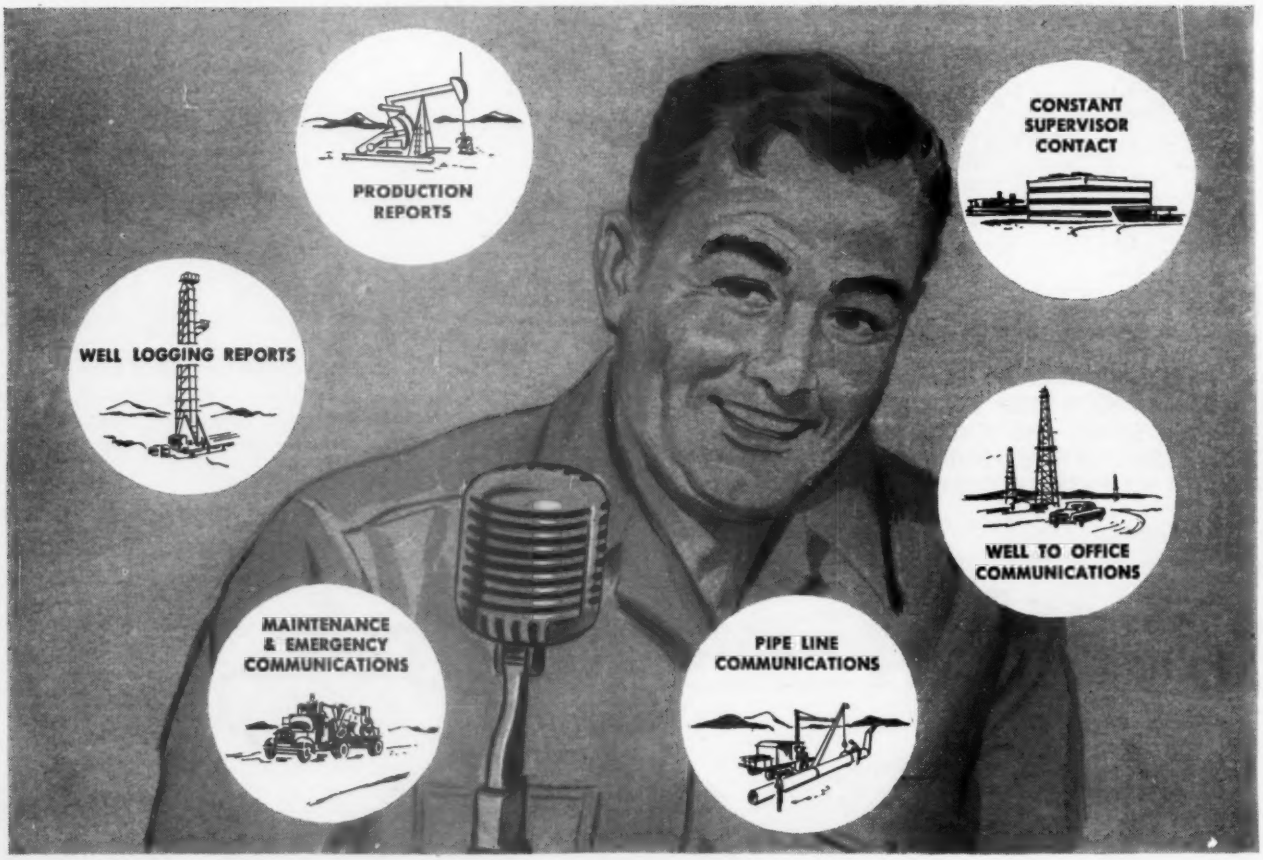
Higher distribution pressures have made the replacement of damaged, worn or obsolete gas stops even more important—especially those on the customer's premises. The recently developed No-Blo Stop Changer makes replacement possible . . . promptly and safely. Old stops are removed and new stops are installed quickly under full line pressure—no outside shut-off required . . . no blowing of gas.

For additional information on the H-17010 Stop Changer and other No-Blo Machines and Fittings, consult your Mueller Representative, your G-97 Catalog or write direct.

MUELLER CO.

Dependable Since 1857

MAIN OFFICE & FACTORY DECATUR, ILLINOIS



HERE'S HOW MOTOROLA 2-WAY RADIO

saves hundreds of MILES and dozens of MAN-HOURS

EVERY DAY

HERE'S HOW MOTOROLA INCREASES PROFITS

By slashing non-productive driving time up to 50% over your entire operation, Motorola 2-way radio will help you and your workers put that time to better use. Auto expenses are cut in half, too.

Supervisors do *more* supervising and *less* driving, and can be reached at all times, in office or car. Reports from rigs and wells are radioed in, and emergencies get immediate action. The entire operation is welded together into one more efficient, greater profit-making unit.

HERE'S WHY ONLY MOTOROLA CAN DO IT SO WELL

VERSATILE: Motorola produces the greatest variety of 2-way radio equipment available . . . portable, mobile and base station equipment are combined to form a custom-made system at production line prices.

RUGGED: Motorola equipment is built to take the severe beating that any oil field work imposes on it . . . to deliver when needed most. Motorola radio is field tested and proved for long life, dependability and economy.

EXCLUSIVE FEATURES: The pioneer and leader, Motorola, offers more exclusive advantages and features—truly the quality 2-way radio.

SERVICE: There is a Motorola Service Station near you. Motorola offers the most complete national service set-up—700 Authorized Service Stations, strategically located and on call 24 hours a day . . . implementing optional Motorola Maintenance agreements, assuring the fastest, most dependable service available.

Motorola
2-WAY RADIO

Motorola Communications & Electronics, Inc.
A SUBSIDIARY OF MOTOROLA, INC.
4501 AUGUSTA BOULEVARD CHICAGO 51, ILLINOIS
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Motorola consistently supplies more mobile radio than all others combined—
proof of acceptance, experience and quality.
The only COMPLETE radio communications service—
specialized engineering . . . product . . . customer service . . . parts . . . installation . . . maintenance . . . finance.
"The best costs you less—specify Motorola".

NEW American® Aluminumcase Meters

American's new Model 5B-225 Aluminumcase Meter has ample capacity for household space heating loads. Weighing under 15 pounds, this new meter features a one-piece precision-machined aluminum alloy body . . . insuring complete parts interchangeability and high resistance to impact damage. Model 5B-225 incorporates all of the excellent characteristics of American Ironcase Meters, including self-lubricating porous bronze bearings to provide prolonged accuracy and minimum wear. New grommet-type bushings in the axle and flag rod stuffing boxes provide dependable, positive leak protection with minimum friction.

Write today for full details on the NEW 5B-225 Aluminumcase Meter by American—your assurance of low-cost, sustained accuracy in metering.

NEW Extra Value

—in high capacity, light weight, and savings all along the line.

NEW High Capacity

—225 cubic feet per hour of 0.6 specific gravity gas at ½-inch water column differential. Working pressure 5 psi.

NEW Light Weight

—saves in shipping, handling and setting. Pressure die-cast aluminum alloy. Shipping weight less than 15 lbs.

NEW Index Box

—easy meter reading because clear, high impact strength molded all-plastic design gives full index visibility.

NEW Distinctive Design

—insures customer acceptance in either indoor or outdoor settings . . . styled by prominent industrial designer.

AMERICAN METER COMPANY

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IN CANADA: Canadian Meter Company, Limited, Hamilton · Edmonton · Calgary

They go best together!

The best gas odorant / The best odorant service

Calodorant "C"—*the best quality cyclic sulfide.* **Alert "80"**—*the best economy priced, quality mercaptan.*

Calodorant "C" is the only natural gas odorant in use that is completely stable in high pressure lines—1000 psi or more—and at low temperatures—0°F or lower. Performs equally well at medium and low pressures.

Alert "80" has been proved in all types of distribution systems under today's more demanding operating conditions. It has met every test by large and small utilities.

Whatever your individual problem, chances are Oronite has already done the research work on it and has the answer. Since the marketing of the first gas odorant in 1927, Oronite's large research facilities have continually studied odorant problems.

Want to know how to neutralize odorant "spills" or help on how to deodorize drums for re-use, or resale? Write your nearest Oronite office for Bulletin 70-16.

If you have an odorization problem, why not talk it over with us?

ORONITE CHEMICAL COMPANY

ORONITE CHEMICAL COMPANY

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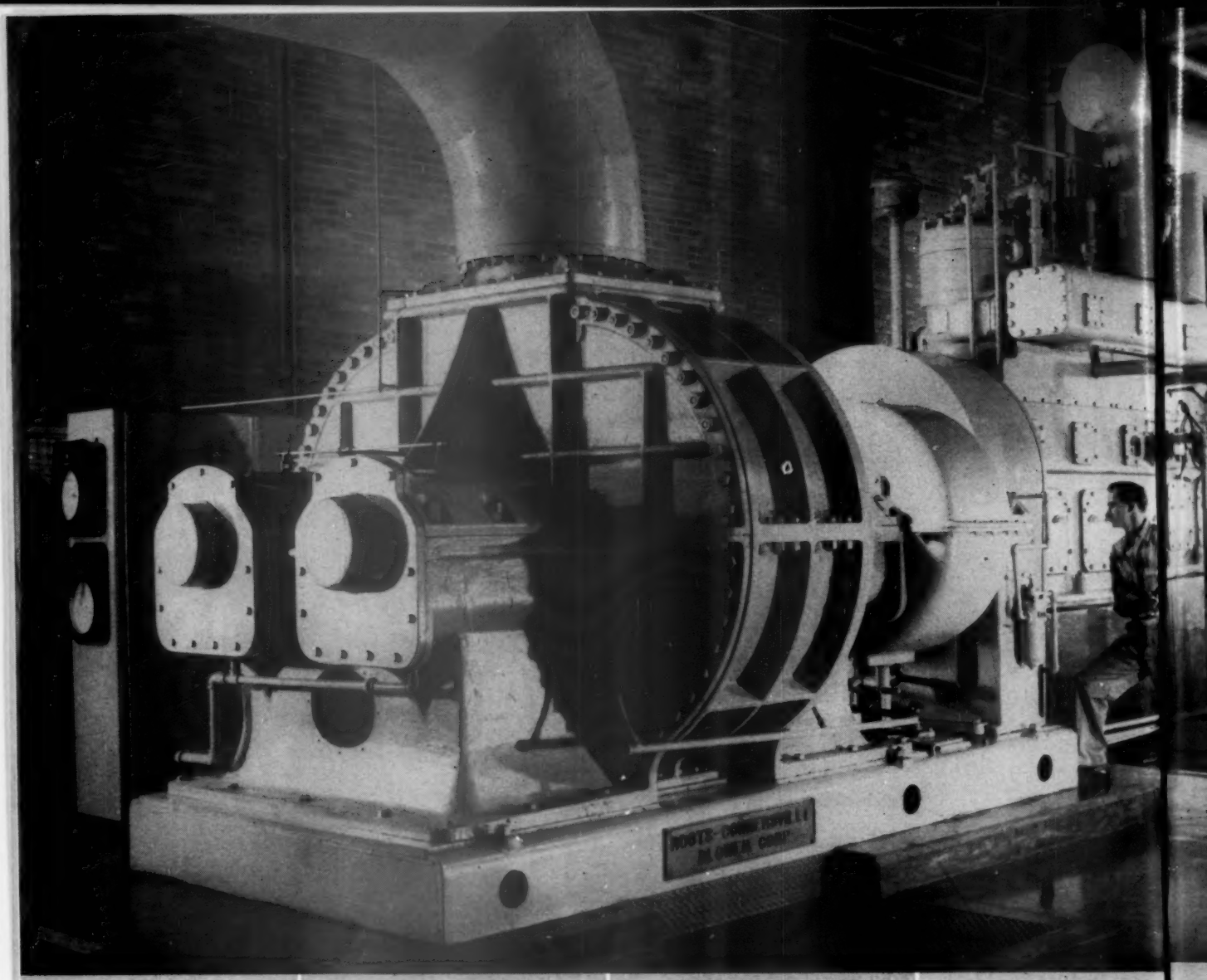
Mercantile Securities Bldg., Dallas 1, Texas • Carew Tower, Cincinnati 2, Ohio

3265

Write for new Catalog GW
M. B. SKINNER CO., South Bend 21, Ind.

SKINNER-SEAL BELL JOINT CLAMP



IDECO

IDECO, Dallas, Tex.—Hydrair and Power Rigs; Full-View Masts; Substructures; Single, Dual and Drive-In Rambler Rigs; Blocks, Swivels, Rotaries; Mud-Pumps; Petroleum Equipment and Supplies.

CLARK

CLARK BROS. CO. DIVISION, Olean, New York—Engines and reciprocating, centrifugal, and axialflow compressors — gas, steam, electric and diesel driven.

Security

SECURITY ENGINEERING DIVISION, Whittier, Calif., Dallas, Tex.—Rock bits, coring bits, reamer rock bits, reamers, casing scrapers, Securaloy.

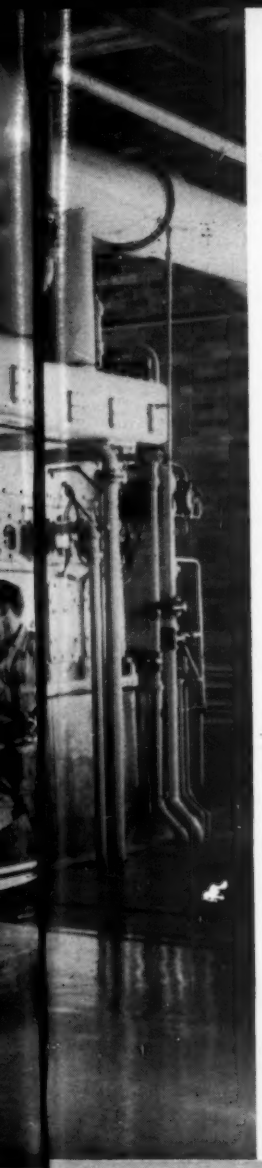
PACIFIC

PACIFIC PUMPS, INC., Hun ington Park, Calif. — Centrifug pumps for refineries, power st tions, pipelines, and chemic plants; plunger pumps for oilwell

the blower with the extra boost

ROOTS SINCE 1854 RC CONNERSVILLE

Now entering its second century of service, the Roots-Connersville Blower Division of Dresser Industries has pioneered the development of efficient equipment designed to move gas and air under moderate pressures. Roots-Connersville gas pumps, blowers and related products have won world-wide recognition for superior design and watch-like precision. Serving many industries, Roots-Connersville manufactures both rotary positive and centrifugal blowers and exhausters, plus an extensive line of gas and vacuum pumps, rotary positive displacement meters, and inert gas generators.



How the DRESSER *plus* + works...

Providing dependable, economical service to an important industrial area, a major Illinois utility company is backed up by an all-star Dresser team. Illustrated at left, a *Roots-Connersville* RCGH gas booster, driven by a *Clark* gas engine, compresses natural gas to 10 pounds per square inch gauge pressure at the rate of one million cubic feet per hour. Popular *Dresser* couplings – used to connect sections of the engine exhaust pipe – are also on the top-flight team putting the Dresser *plus* + to work at this natural gas pipe line booster station. Still more Dresser products work at other tasks in the same plant.

At thousands of industrial installations all over the world, many Dresser products work together in the growing task of producing and processing the fuels and chemicals vital to modern civilization. And behind each of these products stands the combined research, experience, and engineering facilities of all the Dresser companies.

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Magcobar

MAGNET COVE BARIUM CORP., Houston, Tex., Malvern, Ark.—Magcobar and Magcogel drilling muds and other specialized oil well drilling fluids and chemicals.

LANE WELLS COMPANY

LANE-WELLS CO., Los Angeles, Calif., Houston, Tex., Oklahoma City, Okla.—Electric and Radioactivity Well Logging, Koneshot perforating and bullet perforating, packers and bridging plugs.

DRESSER IDECO®

DRESSER-IDECO DIVISION, Columbus, Ohio — Radio and television broadcasting towers, steel buildings, aircraft hangars, mechanical parking garages, electric power substations.

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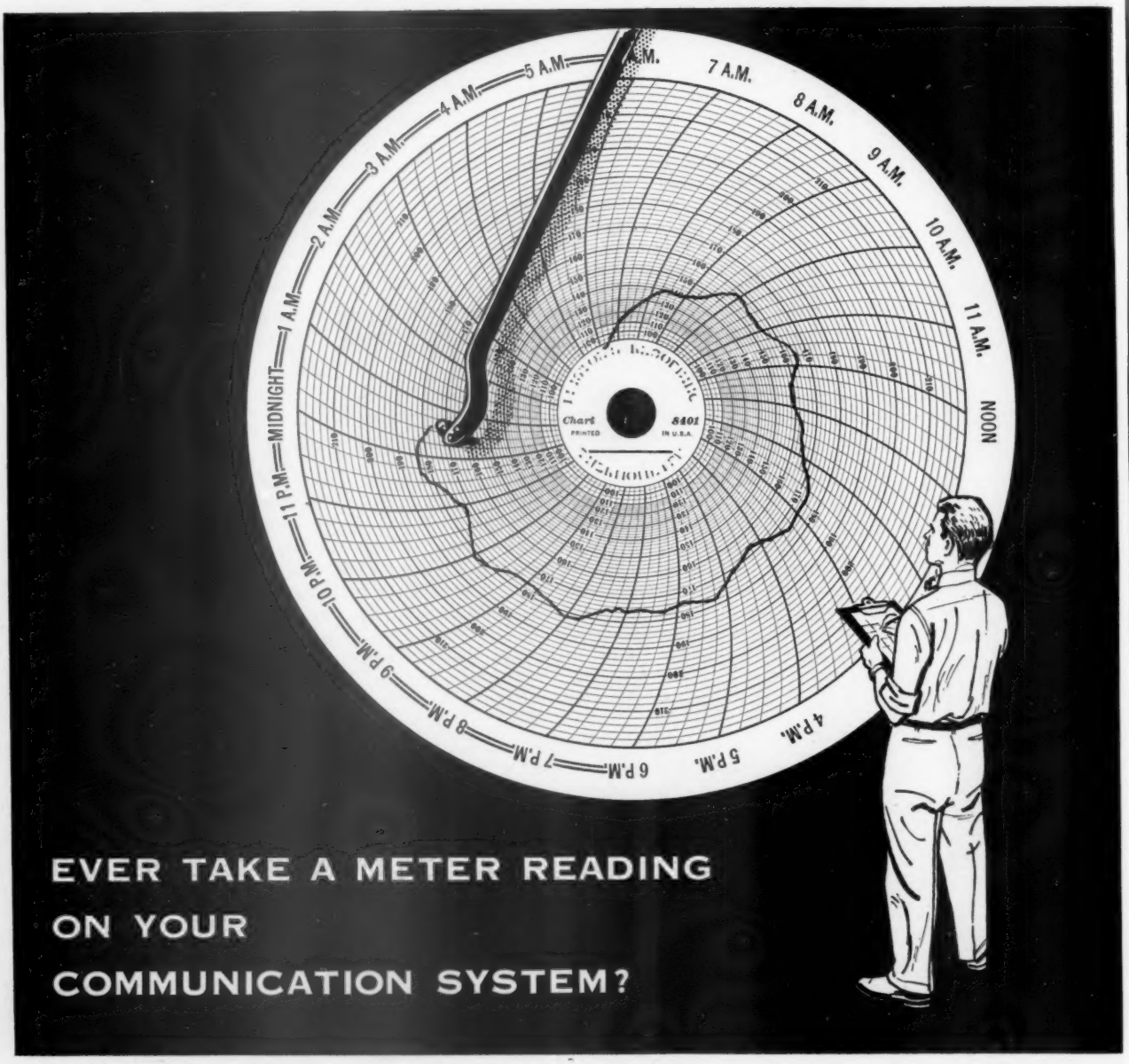

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Editorial . . .

Another Year—Another Job Well Done

SOUTHERN GAS ASSOCIATION will be assembled for the 47th annual convention on May 16 and the advance program leaves no doubt that it will be a typically-meaty-and-vigorous session.

This page will never be in second place when it comes to appreciating and admiring the realistic and thorough approaches of SGA in advancing the gas industry.

In action the year-round, with specialized programs that are best characterized as higher-education, this Association is everlastingly at the job of providing member-companies with authoritative information for better efficiency, better economics and more sales.

There is no better quick-indicator of the benefits that have been derived from membership than the growing list of utilities, pipeline companies, manufacturers, distributors and service organizations which constitute the association.

Clearly, SGA is destined for further growth in membership and in service to that membership.

It would be an omission of serious proportions if we did not observe here that the character of the SGA specialized programs and the membership growth is due, in large measure, to the thoughtful and energetic, but seemingly tireless efforts of Managing Director Robert R. Suttle.

Now, just before the gavel bangs to give New Orleans the temporary status of gas capital of the South, AMERICAN GAS JOURNAL sends its heartiest greetings to amiable President C. I. Wall — just as it sent them to past-presidents H. K. Griffin and John H. Wimberly.

For incoming-President Collins, we send our best wishes and assurances of continued cooperation with SGA in what amounts to our mutual efforts to serve and enhance the gas industry.

Planning or Aspirin for the Northwest

A COMBINATION of personal affiliations with the Pacific Northwest and an ever-heightening interest in the well-being of gas utilities, moves the question: Will the companies really be ready for all the many considerations that are involved in conversion?

Certainly, natural gas will make a tremendously valuable contribution to the large-and-growing industrial economy of the Northwest.

But the spirit of our question goes to the point of having every available scrap of conversion-problem experience, throughout the country, at hand to build reliable insurance against headaches and heartaches.

We have no thought that the companies will not be prepared for such changes as the effects of the new gas characteristics that can be expected in distribution systems, through to the customer's meters. The literature covers those subjects adequately.

Our concern is about the complete preparation of the customers — residential, commercial, industrial — for a period of change and adjustment before the high advantages of natural gas will be fully realized.

Residential and commercial customers will notice different flame characteristics in natural gas . . . they will say it is not-as-hot as manufactured . . . they will say it is hotter . . . they might well say they can't smell natural gas.

Industrial customers will make generally the same observations. But, some of those who use gas for processing will have very real difficulties: Chemical composition will be changed and will affect production-results.

The conversion period holds an unfortunate potential for poor public relations and, as such, an excellent promotional period for the competition.

Fully-planned preparation of customers, exhaustive preplanning for specialized applications and preplanned handling of interim complaints — without losing sight of the ultimate advantages — may have more value for our Northwest friends than a carload of aspirin.

MAY 2 4 1955

Catching Second Breath As Sales Reach New Heights

C. I. Wall
President
Pioneer Natural Gas Company
President
Southern Gas Association

• SOUTHERN GAS ASSOCIATION'S 47th annual convention in New Orleans, May 16, 17 and 18, will climax another year of increased sales — and is expected to open a new era of continued increases in sales. Several new phases have been opened and new strides have been made during the past several months: manufacturers have developed and improved gas appliances; SGA member companies have cooperated to promote new and promising sales trends; and the research of American Gas Association, manufacturers and cooperating SGA members have promulgated an unusual number of outstanding records that will be a boom to the industry.

Two, but not new, activities of SGA — Homes Service and Sales — have been very prominent in developing new industry trends. The majority of the member-companies have coordinated the activities of these 2 departments to produce outstanding results in promotional work. An exchange of promotional ideas, developed in the early part of last year, and the continuation of the advertising plan exchange, has made it possible for the southern group to intensify its public information program.

Several new developments, that will be revealed during the convention, are expected to produce an unprecedented era in natural gas sales. Research work in gas air conditioning; continued research in pulsation of reciprocating-type engines in compressor stations; management development program; and many other project-results will be reviewed during the convention this year.

The problem of pulsation produced by reciprocating-type engines in compressor engines has been under investigation during the past 30 months. This pulsation results in loss of power, numerous mechanical problems due to vibration and difficulty in obtaining accurate meter measurements. The development of the analog computer to analyze the pulsation problems has revealed answers to a number of causes and enabled engineers to avoid future difficulties in a number of instances.

Plans formulated last year for the management-development course at Texas College of Arts and Industries, at Kingsville, proved very successful. A full report of the program will be given during the meeting. SGA directors already have approved continuance of the program for another year. A total of 29 natural gas company management men, from 20 companies in 10 states, attended the SGA management development course this year.

The gas appliance sschool, held in Tulsa, again proved very successful. The school has grown so large that registration for the courses has been limited.

The gas measurement short course, held at University of Oklahoma, also has a record attendance; over 900 men registered for the course this year.

More than 35 round-table conferences were conducted by SGA during the year. These area meetings included discussions and research on: employee relations, industrial sales, accident prevention, dispatching, radio communications, home service, general accounting, natural gas gathering, pipeline operations and maintenance, pipeline engineering, natural gas processing, customer accounting, compressor station operations, distribution operations, advertising, pipeline right-of-way problems, transmission accounting, transmission management, field production, residential sales, gas air conditioning sales, work on consumers' premises, distribution management, and use of electronic computers by engineering personnel.

A complete review of the activities conducted by the association recently was made by a committee that was especially appointed for this purpose. As a result of this review, the activities of the association have been coordinated and duplication eliminated.

The record number of round-table conferences held during the past year has resulted in innumerable idea exchanges to produce better customer service from all companies, a decrease in engineering and personnel problems and a more united industry.

Southern Gas Association has had a very successful year as to the number of jobs accomplished and also has increased in both individual and company memberships. The coordination of SGA company-sponsored activities is a tribute to the outstanding work of a united industry program.

OFFICERS AND MANAGING DIRECTOR OF SGA—1954-1955

Charles I. Wall
President

J. H. Collins, Sr.
1st Vice President

R. A. Puryear
2nd Vice President

Robert R. Suttle
Managing Director

SGA Covers Industry Interests

EVERY DOMINANT consideration in gas industry operations and sales is represented with substantial adequacy on the Southern Gas Association convention program.

Distribution sessions will cover the new ASA B-31 piping code, with Fred A. Hough, who served as its guiding spirit, discussing details. A panel will discuss reduction of unaccounted-for gas. Plastic pipe will be the subject for another panel.

T. W. Rowden, Jr.

Transmission subjects include another presentation of the piping code. A discussion of oil gas versus natural gas will be given by A. D. Harrison, Brooklyn Union Gas Co. An information panel will cover, dispatching, operations and maintenance, engineering, processing and compressor station operation.

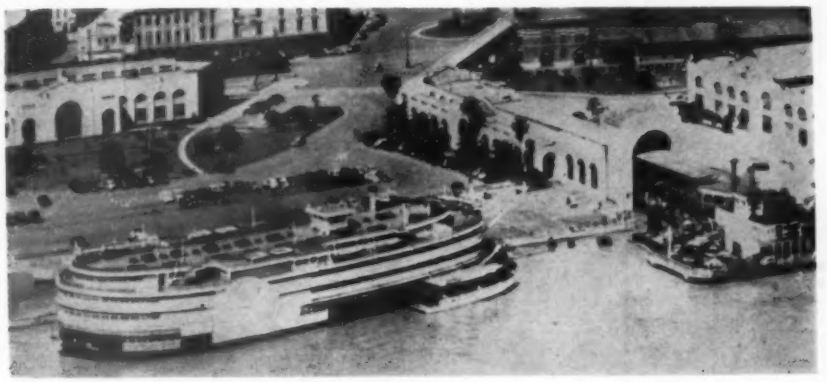
Sales sessions schedule important presentations on Servel's plans by Duncan C. Menzies, and progress in air conditioning by Sheldon Coleman, president, The Coleman Co. Howard D. Valentine, Peoples Gas Light & Coke Co., will view "salesmen — the quick and the dead."

Industrial gas utilization will be headed by J. G. Hopping, Piedmont Natural Gas Co.

Accident prevention, accounting and employee relations will have very full coverage with leaders in the fields occupying the chairs and other authorities addressing the groups.

F. Marion Banks, president, Southern California Gas Co., will address the convention in his capacity as president, American Gas Association. T. T. Arden, executive vice president, Robertshaw-Fulton Controls Co., will be the presidential representative of Gas Appliance Manufacturers Association.

Thad W. Rowden, Jr., Arkansas Western Gas Co., is SGA general committee chairman, assisted by L. A. Bickel, Lone Star Gas Co., and Ernest G. Hotze, Clark Bros. division, Dresser Operations.



SS President at Dock

Delta C&S Air Lines Photo

SGA COMPANY MEMBERSHIP

GAS COMPANY members are from 16 states:

Alabama	3
Arkansas	3
Colorado	1
Georgia	3
Illinois	1
Kentucky	2
Louisiana	12
Michigan	1
Mississippi	2
Missouri	1
Nebraska	1
New Mexico	1
North Carolina	1
Oklahoma	7
Tennessee	5
Texas	25
Virginia	2
Total	71

ASSOCIATE MEMBER companies are from 26 states:

Alabama	4
California	14
Colorado	1
Connecticut	2
Georgia	3
Illinois	13
Indiana	6
Iowa	1
Kansas	3
Kentucky	5
Louisiana	11
Massachusetts	3
Michigan	4
Minnesota	2
Mississippi	1
Missouri	6
New Jersey	2
New York	13
Ohio	12
Oklahoma	6
Pennsylvania	14
Tennessee	7
Texas	49
Wisconsin	4
Total	186

SOUTHERN GAS ASSOCIATION—1954-1955

OFFICERS

PRESIDENT: C. I. Wall, Pioneer Natural Gas Company, Lubbock, Tex.

1ST VICE-PRESIDENT: J. H. Collins, Sr., New Orleans Public Service, Inc.

2D VICE-PRESIDENT: R. A. Puryear, Jr., Alabama Gas Corp., Birmingham.

TREASURER: H. V. McConkey, Southern Union Gas Co., Dallas.

SECRETARY: Earl J. Newlin, State Fuel Supply Company, Oklahoma City.

ASSISTANT SECRETARY: Kyle H. Turner, Atlanta Gas Light Company, Atlanta.

MANAGING DIRECTOR: Robert R. Suttle, Dallas.

DIRECTORS

L. H. Ernst, Caloric Stove Corp., Atlanta.

S. V. O'Leric, Chattanooga Gas Co.

W. K. Sanders, Trunkline Gas Co., Houston.

H. C. Webb, Oklahoma Natural Gas Co., Tulsa.

James A. Wilson, United Gas Corp., Houston.

Carl E. Cloud, MidSouth Gas Co., Little Rock, Ark.

James A. Davis, Empire Southern Gas Co., Fort Worth.

E. G. Hotze, Clark Bros. Co., div. Dresser Operations, Houston.

Charles K. Oxford, Gas Light Company of Columbus, Columbus, Ga.

C. L. Perkins, El Paso Natural Gas Co.

O. W. Clark, Southern Natural Gas Co., Birmingham.

Duncan A. Crawford, Atlanta Gas Light Co.

B. G. Duncan, Piedmont Natural Gas Co., Inc., Charlotte, N. C.

Wm. D. Mastin, Robertshaw-Fulton Controls Co., Chattanooga.

Willard G. Wiegel, Lone Star Gas Co., Dallas.

ADVISORY COUNCIL

CHAIRMAN: Hansell Hillyer, South Atlantic Gas Co., Savannah.

VICE-CHAIRMAN: E. R. Cunningham, Texas Eastern Transmission Corp., Shreveport.

SECTION CHAIRMEN

ACCOUNTING: R. L. Hinch, Nashville Gas Company, Nashville, Tennessee.

DISTRIBUTION: Jack M. Averett, Gas Light Co. of Columbus, Columbus, Ga.

EMPLOYEE RELATIONS: V. E. Rasch, United Gas Corporation, Shreveport, La.

SALES: J. H. Chenery, Alabama Gas Corp., Birmingham, Ala.

TRANSMISSION: E. Clyde McGraw, Transcontinental Gas P/L Corp., Houston, Tex.

COMMITTEE CHAIRMEN

CONVENTION: Thad W. Rowden, Jr., Arkansas Western Gas Co., Fayetteville.

MEMBERSHIP: J. H. Collins, Sr., New Orleans Public Service, Inc.

SGA Friendship Hour

• FRIENDSHIP AND FUN are never very far away when Southern Gas Association meets — in large groups or small.

After last year's "friendship hour" — which turned out to be a gay and colorful takeover of the lawn area surrounding the Shamrock Pool, in Houston — after that, we have heard the repeated-question from southern gas men, "Bob Suttle's going to try to beat that! What will it be in N'Orleans?"

Mr. Suttle figured it about this way: Nobody fell, jumped or was pushed into the Shamrock Pool, so with all the water in the Mississippi going right past us in N'Orleans, let's all go on the river. And that's how this year's party-idea was born.

With no basis for fear of seasickness, it's safe to say that the 2,000 people in New Orleans for gas matters, will go up the gangplank to board the S. S. President, on May 17, for what is billed as "a gala party cruise."

The "friendship hour" really will be 4 hours, with river-style entertainment, cocktails and buffet supper. And, by the time the President docks again, we're certain that there will have been more than one reference to "The Robert E. Lee."

As is usual, at SGA conventions, the hosts at the "friendship hour" are the manufacturers and service organizations associated with SGA. By way of a nod to them, here, we note their names.

Hosts at SGA Mississippi Riverboat Friendship Hour

American Air Filter Co., Inc.
American Cast Iron Pipe Co.
American Meter Co., Inc.
Appliance & electronics div., AVCO Mfg. Corp.
A-T-M Gas Equipment Co.

Barrett div., Allied Chem. & Dye Corp.
Black, Sivalls & Bryson, Inc.
Blue Bonnet Appliance Sales Co.
Bryant Heater div., A.G.E., Inc.

Caloric Appliance Corp.
Cameron Iron Works, Inc.
Catlett Engineers, Inc.
Chambers
Chaplin-Fulton Mfg. Co.
Chattanooga Royal Co., div. Chattanooga Impl. & Mfg. Co.
Cinch Pipeline Equipment, Inc.
Clark Bros. Co., div. Dresser Operations, Inc.
Cleaner Pipelines Co.
Cleveland Heater Co.
Cleveland Trencher Co.
Coleman Co., Inc.
Combustion Engineering, Inc.
Consolidated Western Steel div., U. S. Steel Corp.
Continental Supply Co.
Control Corp.
C. Lee Cook Mfg. Co.
Cooper-Bessemer Corp.
Cribben and Sexton Co.
M. J. Crose Mfg. Co., Inc.

S. D. Day Co.
Dearborn Chemical Co.
Dearborn Stove Co.
De Laval Steam Turbine Co.
Dixie Products, Inc.
Double Seal Ring Co.
Dresser Manufacturing div.

Ebasco Services Inc.
Eggelhof Engineers, Inc.
Empire Stove Co.
Esso Standard Oil Co.

F. J. Evans Engineering Co.
Fisher Governor Co.
Florence Stove Co.
Fluor Corp., Ltd.
Ford, Bacon & Davis Const. Corp.
Foxboro Co.
France Packing Co.
R. H. Fulton & Co.

Garlock Packing Co.
General Controls Co.
General Electric Co., turbine div.
E. F. Griffiths Co.
Grove Regulator Co.

Hamilton Mfg. Co.
Hardwick Stove Co., Inc.
Hays Manufacturing Co.
Heath Survey Consultants, Inc.
M. M. Hedges Mfg. Co., Inc.
Hill, Hubbell and Co., div. General Paint Corp.
Holcombe Co.

Industrial X-Ray Engineers
Ingersoll-Rand Co.

Johns-Manville Sales Corp.

Keith-Kote, Inc.
Koppers Co., Inc., tar products div.

Ladish Co.
La.-Miss. Pipe Line Const. Corp.
Lattimer-Stevens Co.
Lennox Furnace Co.
A. M. Lockett & Co., Ltd.
Lone Star Steel Co.
Lubricosos Specialties Mfg. Co.
Lynn McGuffy Co.

Magic Chef, Inc.
Maintenance Engineering Corp.
Massey Machine Co.
Mavor-Kelly Co.
McCabe-Powers Auto Body Co.
Metalbestos div., William Wallace Co.
Midwestern, Inc.
Milwaukee Gas Specialty Co.
Minneapolis-Honeywell Regulator Co.
Modern Welding Co.
Motorola Communications & Electronics, Inc.
Mueller Co.

Natural Gas Odorizing Co., Inc.
J. P. Neill & Co.

Ohio Foundry and Mfg. Co.
Oil Well Supply div., U. S. Steel Corp.
O'Keefe and Merritt Co.
Oklaphoma Pipe Line Constructors
Oronite Chemical Co.

Peerless Mfg. Corp.
Pipe Line Service Corp.
Pittsburgh Coke & Chemical Co.
Pittsburgh Testing Laboratory
Protecto Wrap Co.

Radio Corporation of America
Ready-Power Co.
Reynolds Gas Regulator Co.
Rheem Mfg. Co.
Robertshaw-Fulton Controls Co.
Rockwell Mfg. Co.
Geo. D. Roper Corp.
Rosson-Richards Co.
Royal Jet, Inc.
Ruud Mfg. Co.

Safety Gas Main Stopper Co.
Sellers Engineering Co.
Servel Inc.
M. B. Skinner Co.
A. O. Smith Corp.
Sonner Burner Co.
Southern Cross Foresters
Sprague Meter Co.
Stewart-Warner Corp.
Stone & Webster Service Corp.
Superior Iron Works & Supply Co., Inc.
Surface Combustion Corp.

Tappan Stove Co.
Taylor Forge & Pipe Works
L. M. Taylor & Co.
Temco, Inc.
Tube Turns, div., National Cylinder Gas Co.
Tulsa Pipe Coating Co.

United Pipe Utility Suppliers, Inc.
Universal Controls Corp.

Vinson Supply Co.
Vulcan Rubber Products, Inc.

Walworth Co.
Ward Heater Co.
Watkins Inc.
Weaks Supply Co., Ltd.
Webster Engineering Co.
Westcott & Greis, Inc.
Whirlpool Corp.
White-Rodgers Electric Co.
T. D. Williamson, Inc.
John Wood Co.
Worthington Corp.

H. Zinder & Associates, Inc.

Customers are increasing, revenues are getting bigger, more natural gas is bought, expenses glide upward, capital investments are growing and swelling net assets — even net income has broken into a new high level — the South is rising and

Natural Gas Rises With the South

Ernestine Adams*

EVERY item is going up in southern gas economics. In a survey of annual reports of gas companies in this area, operating revenues are rising without exception and all except 2 of the 17 firms covered had higher net incomes than in 1953.

There were indications that the sweeping rise in operations was merely the reflection of growth and development of the New South.

Not all companies are satisfied with the expansion. At the same time they acknowledged increase in net income, a few companies pointed out that this rise was lagging behind the increase in operating revenues and in expenses.

Companies in this situation, however, were in the minority. Of the 17 studied, 10 had larger increases in net returns than in gross sales.

The overall picture is one of healthy, steady expansion. The few clouds were frankly shared with stockholders in the annual reports. Among these were:

1. **Higher cost of natural gas**
2. **Time lag in establishing rates**
3. **Continued high taxes**
4. **Merchandising of gas appliances**

Of these four top problems the one most open to company effort seemed to be the merchandising situation. The overall trend was downward for appliance sales but the few companies which made all out sales promotions apparently got good returns on their merchandising effort.

Oklahoma Natural Gas equipped an exhibition bus in cooperation with a gas appliance manufacturer and made a tour of eating places in small towns.

United Gas worked with manufacturers to develop new applications of gas service such as automatic gas ranges and new ignition devices.

Piedmont Natural Gas in the Carolinas pushed appliance sales to the point where residential use of gas per customer increased about 30 per cent over 1953.

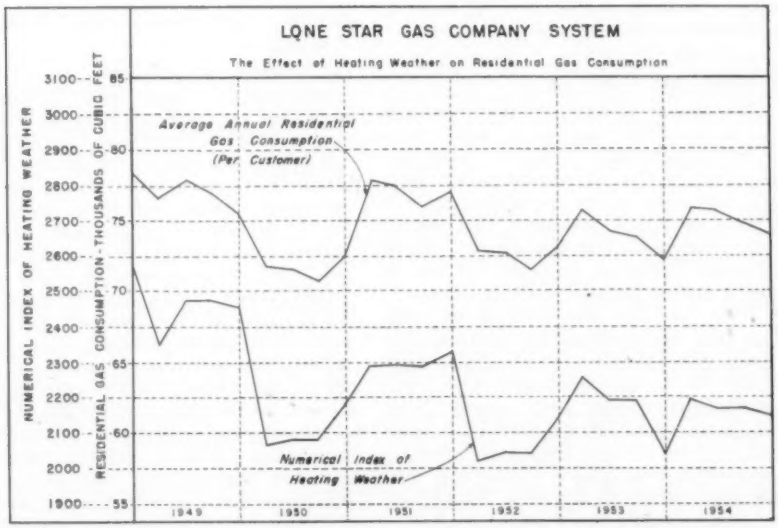
Chattanooga Gas Co. returned to merchandising of heating equipment to give this field more aggressive promotion.

Lone Star Gas created a new position of director of promotion and sales to emphasize this department's work.

Mississippi Valley Gas installed the largest air conditioning unit in the state at a new factory.

Brief summaries of companies annual reports follow.

*Economics editor.



Lone Star Gas Co. shows exactly why a mild winter season equals a fall-off in gas consumption. This graph in the annual report compares numerical index of heating weather with average residential gas consumption per customer.

ALABAMA GAS CORP.

As in all other gas companies in the South, Alabama Gas Corp., showed an increase in sales and in revenues. "The increase was due in part to sales of gas to approximately 13,000 new customers; to increased demand for gas, and to an increase in gas rates, effective in September 1953, which was designed to offset an equal increase in cost of gas purchased," was the statement made in the annual report.

The company indicated that it was not the growth of gas so much as growth of its territory that had spurred progress in the last several years. "In the initial years, that is to say from the introduction of natural gas into some of the plants in 1930 to 1940, the company's expansion resulted largely from growing acceptance by the public of the economy, efficiency and convenience of natural gas as a fuel and, hence, demand for it in factories, stores and homes. Since 1940 and more particularly subsequent to 1947 the growth of the company's plant investments, revenues, earnings has stemmed principally from economic advancement of the South," the report stated.

Despite the increase in gas sales there was a decrease in volume of appliance sales by the company. "The company is continuing to promote the sale of gas appliances through its own and dealer organizations. The volume of appliance sales in 1954 aggregated $1,482,000 while those of 1953 totalled $1,744,000."

Alabama Gas has a total of 199,324 meters in service including 181,709 residential. Residential average annual price per Mcf is 89¢ for natural gas with 1039 Btu and 50¢ for coke oven gas with 552 Btu content. Earnings were 5.3% of capital assets.

ARKANSAS LOUISIANA GAS CO.

Although Arkansas Louisiana income improved over last year and the year before it is not as high as 1951. The annual report explains it this way. "The demand for natural gas in the United States has almost tripled in the past decade and most of this demand must be supplied from the great gas-producing regions of the Southwest and Gulf Coast. Tremendous competitive pressures have been exerted by the supply-demand factor and the purchase prices necessary to acquire gas reserves have responded to these pressures and have increased sharply. In addition, wages, salaries, and other expenses have increased in the gas industry as in industry generally.

"Due to the large increase in Arkansas Louisiana Gas Co.'s volume of sales, we

were able to absorb these increases and still produce reasonable earnings through 1950. Since that time these increasing costs, particularly purchased gas prices, have caused earnings to decrease steadily."

Number of customers served by this company has doubled in the last 10 years. Much of this is due to the fact that the region of Central and Southern Arkansas, Northern Louisiana and Northeast Texas, covered by the company, has experienced an exceptional industrial development. The company feels that the development will continue at a level well above national average during the coming years.

Arkansas Louisiana Gas served 233,872 customers including 205,051 residential. Average price per Mcf of residential gas is 49¢. Earnings on the basis of plant investments are 2.5%.

ATLANTA GAS LIGHT CO.

The annual report of Atlanta Gas Light Co. stated simply a trend in which most of the companies were found. "Our business," it said, "continued to grow with more new customers, more gas delivered and greater operating revenues. The upward trend of operating cost has, however, largely offset the increased revenues resulting in only a modest increase in the net income."

There was also the decrease in appliance sales that seems to be prevalent. The report read, "Merchandise gross sales were $1,167,493 as compared with $1,309,163 for the previous year; 2,932 ranges, 214 refrigerators and 2,099 water heaters were sold. The net income from merchandising and jobbing was $55,856 (22%) less than last year caused by intensive competition and buyers' resistance."

Atlanta Gas has both natural and manufactured gas, although the large portion is natural gas. For natural gas there is a total of 252,101 customers of which 227,636 are residential. Average use per residential customer is 100,034 therms for $69.92 in revenue. Revenue per therm is 6.76 cents. In manufactured gas the company has an average of 800,240 customers with 700,487 residential. And here the average per residential customer is 373 therms of gas for $78.30 and the revenue per therm is 21¢.

The report points out that the 11% increase in operating revenues reflects the effect in increase in rates passing on to the customer the corresponding increase in purchased gas cost and also reflects the two decreases in gas rates made during the year when natural gas was first turned on.

CHATTANOOGA GAS CO.

Merchandising of gas appliances is covered in some detail by the Chattanooga Gas report:

"Although we did about the same volume of business in our 1954 fiscal year as compared with the previous year our loss on this activity increased $14,000. There are several reasons for this. In the residential field we were faced with a depressed appliance market, and also an unusually high inventory in certain items. The depressed market made the competitive situation even more acute than usual, and it was necessary for us to make higher than usual allowances for trade-ins and in the case of the excessive inventory we had to make price concessions to reduce our stock. We do benefit in increased sales of gas as a result of the sale of equipment.

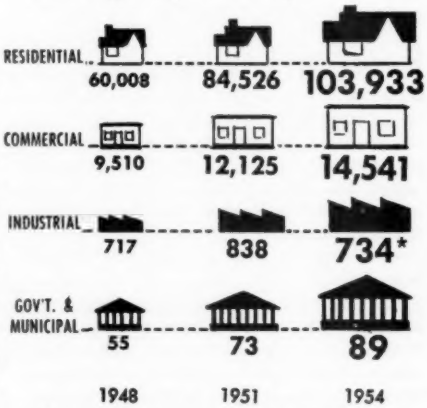
"Many new customers and additional loads were secured by our commercial department through the sale of gas-fired equipment for processing, boiler fuel and miscellaneous heat treating operations. In the year just past we sold 1231 pieces of equipment as compared to 1088 during the previous year. We were successful in getting gas equipment in more new housing developments than we have been in past years, and we look forward to obtaining more of this business in the future.

"During the year we revived a rental-purchase program, which had in the past enabled us to successfully meet (no-down payment) competition and which also serves as a good means for residential load building.

"After much deliberation your company decided to return to the merchandising of heating equipment which heretofore has been handled entirely by heating dealers."

Returns were 3.7 per cent on net plant investment. Average number of customers in 1954 was 13,804 and average gas send-out was 14,432 Mcf per day.

Sales go up and up . . .



*Certain customers previously classified as industrial were changed to commercial in 1953. In that year this adjusted figure was 699.

Every class of customer has grown since 1948 for Mississippi Valley Gas Co. and sales to each have grown also.

CONSOLIDATED GAS UTILITIES CORP.

This company points out another reason for decline in earnings affecting all companies. Its report reads: "One of the problems that confronts a public utility is the regulatory lag in establishing rates at the level needed to offset rise in expenses. After the increased costs are incurred, the company is forced to seek relief through the regulatory commissions, but considerable time, frequently a year or more, has elapsed before rate increases to the consumer can be obtained, and then increases are granted belatedly on the basis of the current record, without recompense for the elapsed period of inadequate earnings. This fact has been primarily responsible for the recent decline in earnings."

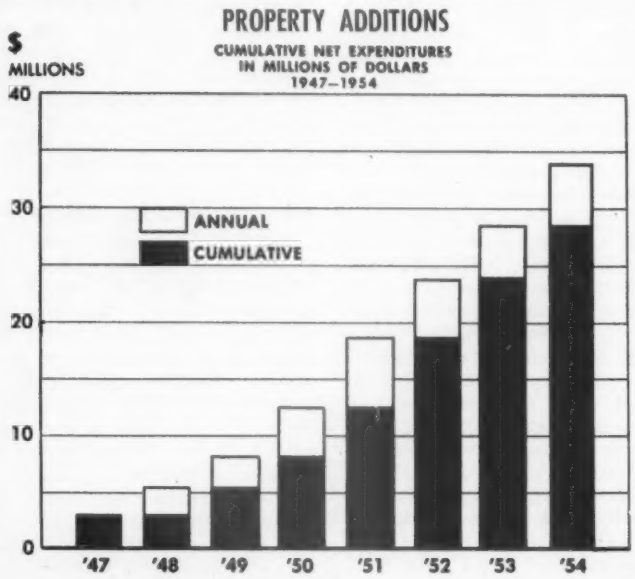
Total sales for the year by Consolidated Gas were 34,733,075 Mcf with 6,159,563 Mcf residential and 18,563,237 Mcf industrial. There was an increase in residential consumers but average use per customer was less due to an extremely mild winter.

Return on capital for 1954 was 3.1%.

MISSISSIPPI VALLEY GAS CO.

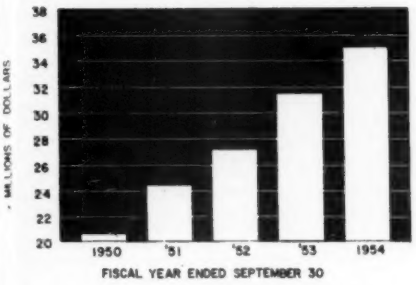
This company proudly reported that "Substantial gains were made in amount of gas air-conditioning installed on company mains by both commercial and industrial customers. The largest air-conditioning unit,

Capital expenditures increase property investment . . .



Gas Service Co. spent about $6,000,000 in 1954 in new construction, the largest amount since 1951.

Operating revenues climb . .



Atlanta Gas Light Co. annual report shows in graph form the spectacular rise in operating revenues in five years.

driven by gas fuel equipment, ever installed in the state—one with 1250-ton capacity—went into service this past summer in a new, totally air-conditioned factory at Greenville, Mississippi. Another 2800 tons of new air-conditioning load is now installed or is being installed in company territory."

In addition the report mentioned other sources of revenue: "Agricultural use of gas is still rising, particularly in gas engine-powered cotton gins where gas is also used for drying. Irrigation of crops with gas-engine power is another new use in this area and is being strongly promoted, particularly in the rich farming sections of company territory."

Mississippi Valley Gas covers the north half of Mississippi down to Jackson and also Natchez in the southwest. Its customers at the end of the year totaled 119,297 with 103,933 residential. Nearly 7000 were added in 1954. These customers bought 37,977,087 Mcf during the year. The largest volume went to industrial customers, who consumed 24,056,462 Mcf. Residential consumers used 8,574,850 Mcf.

Percentage return on net investment was 3.5%.

GAS SERVICE CO.

Formerly a subsidiary of Cities Service Company, all the stock of this company was offered to the public in 1954 and within a short time 9773 shareholders had bought stock. Stockholders on December 16 numbered 11,312.

The company had 497,152 customers at the end of the year, a gain of 22,740 over 1953. Total gas sales also reached an all time high of 137,329,763 Mcf.

Gas Service Company maintains a sales department in all of its operating divisions with the exception of Oklahoma where the sale of appliances by utilities is prohibited.

"Many new developments in appliances have been pioneered for the purpose of promoting public acceptance," reads the report. "This company has been first to pioneer such new developments as the automatic gas range with electric ignition that eliminates heat producing pilots, automatic gas clothes dryers, gas incinerators, and gas-oil furnaces and burners for home heating. Gas-oil heating equipment not only acts as a 'peak shaver' but is two-fuel protection for customers," the report states.

Net income in 1954 was 5.0 per cent of capital investment. The company serves Kansas City and Joplin, Missouri; Hutchinson and Wichita, Kansas; Miami and Bartlesville, Oklahoma, among its 230 communities.

HOUSTON NATURAL GAS CORP.

The tax bill was mentioned by Houston Natural Gas Corporation as one of the significant portions of the company's revenue. Their tabulations showed that taxes came third in amount among expenditures. (In other reports taxes were second.) Gas purchases were first, salaries second, and taxes third. Taxes were invariably much more than net income. For instance, for this company, net income amounted to $1,274,321 and total taxes amounted to $2,260,000.

Another item which concerned Houston Natural Gas was the matter of keeping pace with the requirements of its area. Stated the report: "So long as the influx of new residents and business enterprises into the region served by the company continues, there can be no departure from the pattern established in recent years calling for substantial annual additions to plant and property. During the fiscal year, in keeping pace with the service requirements of a fast expanding population, Houston Natural added a net investment of $3,879,000 in property, plant improvements and new construction. This 12.4% increase over the previous year brought the value of the company's total property, plant, and equipment to more than $35,000,000."

At the close of the year this company had 203,314 gas connections. It was in Decem-

Table 1. Financial statistics for 1954 taken from annual reports of Southern Gas Companies

	Operating Revenues 1954 ($1000)				Operating and Other Expenses ($1000)					Number Shares ($1000) 1st Common 2nd Preferred	Common Dividend per Share Price 12/31/54	Net Fixed Assets ($1000)	Working Capital ($1000)[8] 1st 1954 2nd 1953	Capital Expenditures ($1000) % of 1953	Net Income ($1000) % of 1953
	Residential	Commercial	Industrial	Others[6]	Total	Natural Gas Purchased	Maintenance	Depreciation (depletion)	Total Taxes ($1000)						
Alabama Gas Corp.	$13,501	$ 3,112	$ 5,228	$ 714	$ 22,555	$ 9,637	$ 869	$1,026	$ 3,392	$ 925	$1.04	$ 32,760	(1,453)	$ 4,483	$ 1,711
Per cent of 1953	117%	112%	105%	122%	113%	114%	100%	110%	109%	29	28¾	111%	(599)	—	140%
Ark.-Louisiana Gas Co.	9,040	2,893	18,217	2,417	42,421	16,349	2,585	3,849	2,366	3,802	.50	76,067	6,766	10,664	1,950
Per cent of 1953	111%	109%	120%	95%	114%	120%	104%	111%	81%	none	16	109%	4,144	95%	89%
Atlantic Gas Light Co.[2]	15,916	4,019	13,704	351	35,048	21,316	1,398	1,020	2,633	833	1.20	53,437[4]	178	5,893	1,735
Per cent of 1953	111%	110%	112%	138%	111%	117%	109%	112%	107%	50	24	112%	316	104%	105%
Chattanooga Gas Co.	1,186	774	2,207	—	4,195	2,461	172	179	333	650	none	6,607	73	554	203
Per cent of 1953	121%	136%	118%	—	122%	122%	87%	174%	140%	none	7	—	—	53%	140%
Consolidated Gas Utilities	3,802	994	3,182	1,649	9,860	4,172	569	679	771	886	.75	28,592	790	960	891
Per cent of 1953	108%	101%	115%	106%	107%	119%	108%	107%	85%	none	14½	—	—	—	90%
Gas Service Co.	—	—	—	—	51,097	27,110	2,904	1,690	9,426	1,500	1.24	55,450	(3,340)	6,000	2,792
Per cent of 1953	—	—	—	—	116%	121%	103%	108%	106%	none	a23¾	108%	(2,809)	129	132%
Houston Natural Gas Co.	8,545	1,914	3,910	3,972	14,861	5,152	838	1,098	2,260	476	1.00	35,167	1,050	3,879	1,274
Per cent of 1953	—	—	—	—	109%	105%	116%	112%	100%	160	28¾	112%	1,218	112%	109%
Lone Star Gas Co.	35,197	7,693	12,204	51,789	78,102	16,731	4,256	9,282	11,814	5,499	1.40	295,620[3]	6,766	24,632	10,875
Per cent of 1953	112%	109%	113%	110%	109%	113%	107%	108%	102%	183	27¼	107%	16,873	83%	124%
Mississippi Valley Gas Co.	6,265	2,167	4,544	68	13,082	7,209	429	464	1,280	400	1.00	20,127	(1,714)	2,391	700
Per cent of 1953	115%	118%	122%	283%	115%	120%	113%	115%	112%	none	23	110%	(1,634)	—	114%
Mobile Gas Service Corp.	2,285	712	5,009	—	8,012	5,604	148	167	647	240	.22½	9,192[3]	798	1,173	425
Per cent of 1953	121%	114%	93%	—	101%	98%	95%	116%	93%	17	—	114%	24	—	107%
Nashville Gas Co.[1]	2,923	1,678	1,519	—	6,180	2,805[4]	179	268	1,116	10	[1]	9,835	80	749	477
Per cent of 1953	117%	128%	121%	—	121%	139%	102%	111%	111%	15	—	—	—	—	103%
Oklahoma Natural Gas Co.	17,540	5,366	10,187	2,199	37,058	9,941	1,967	3,846	5,770	2,505	1.20	129,753	(4,733)	10,724	4,869
Per cent of 1953	116%	121%	130%	163%	122%	131%	107%	109%	130%	340	22¾	107%	(8,362)	—	153%
Piedmont Natural Gas Co.	2,332	1,403	1,626	361	5,812	2,157	389	352	531	415	none	16,312[3]	458	1,409	761
Per cent of 1953	121%	114%	174%	137%	132%	142%	152%	109%	127%	none	12¾	108%	786	—	204%
Pioneer Natural Gas Co.	5,311	1,635	2,132	2,495	12,206	2,364	737	872	2,022	1,456	—	37,923	3,807	4,741[5]	2,492
Per cent of 1953	106%	101%	105%	153%	111%	100%	119%	115%	111%	none	—	114%	1,615	140%	128%
Rio Grande Valley Gas Co.	1,172	492	1,062	198	2,924	2,937	—	265	627	2,080	.14	9,155[3]	519	480	484
Per cent of 1953	106%	98%	107%	96%	104%	104%	—	103%	102%	none	2¾	102%	564	85%	106%
Southern Union Gas Co.	—	—	—	—	26,823	9,234	1,313	1,761	2,591	2,025	.90	71,432	468	6,802	3,305
Per cent of 1953	—	—	—	—	116%	125%	117%	109%	133%	157%	21	112%	4,115	110%	127%
United Gas Corp.	26,849	12,286	309,667	735,697	215,188	77,511	6,756	19,107	188,438	12,890	1.31	500,109	42,556	51,177[7]	26,749
Per cent of 1953	110%	104%	112%	103%	103%	112%	111%	105%	103%	none	33½	105%	48,229	—	104%

a asked
[1] Subsidiary of Tennessee Natural Gas Lines.
[2] Year ending Sept. 30, 1954.
[3] Gross value.
[4] From parent company.
[5] Net expenditures.
[6] Includes sales to other public utilities or pipe lines.
[7] Of this $7,010,565 was for distribution.
[8] Working capital is current assets minus current liabilities. Parentheses indicate higher liabilities.

ber of 1947 that the 100,000th meter was installed and in June 1954 the company installed the 200,000th meter.

Returns for the company were 3.6% based on net assets.

MOBILE GAS SERVICE CORP.

The report on one case gives us an idea of the trials and tribulations of the gas utility companies. Mobile Gas Service has this to say in its annual report:

"In June 1953 United Gas Pipe Line Company filed with the Federal Power Commission new schedules increasing from 10.7¢ to 14.5¢ Mcf the rates for gas sold to the company for resale to Ideal Cement Company. This increased rate was permitted by the Federal Power Commission, to become effective July 25, 1953, with the result that the company has since that date sold gas to Ideal under rates specified by contract which are 2.5¢ per Mcf less than the cost of such gas. The company petitioned the United States Circuit Court of Appeals to set aside the Federal Power Commission order on the ground that the 10.7¢ rate was fixed by contract with United and could not be changed by United merely filing a new schedule of rates. The Third Circuit Court of Appeals sustained the company's contention, but the Federal Power Commission petitioned the United States Supreme Court for a Writ of Certiorari to review the decision of the Third Circuit Court. The Supreme Court granted certiorari on February 28, 1955. The ultimate disposition of the matter now awaits the decision of the Supreme Court."

At the end of the year, Mobile Gas had 49,400 meters, an increase of almost 5000 since 1953. The company had an average of 45,449 customers of which 42,264 were residential. Each customer used an average 70.8 Mcf of gas at a cost of $54.07. Revenue per Mcf amounted to 76¢. The company sold 34,703,376 Mcf of which nearly 30 billion was for industrial use.

Percentage return on the utility plant was 4.6%.

LONE STAR GAS CO.

Two major organization realignments were made in 1954 by this company. One of them was creation of the position of director of promotion and sales for more vigorous pursuit of sales in overall operations. Also a department of research and development was established in January, 1955.

"The goal of the new department," states the report, " is to develop and make available new processes so that the companies may operate to better advantage. The department will devote time and energy to the many technological problems confronting Lone Star as a part of the oil and gas industry, and will initiate new programs of research and development applying to all divisions of system operations."

Customers and volumes were distributed like this:

	Number customers	Volume MMCF
Residential	619,219	44,603
Commercial	67,090	11,617
Industrial	3,640	57,593
Electric generation	33	44,094
Transmission utilities	2	18,084
Field	536	12,563
Indirect (other utilities)	5,476	667
Total	695,996	189,222
		gallons
Stargas	17,294	10,691

Although gas revenues increased, a mild winter cut heating requirements 9 per cent below average, reducing total sales.

NASHVILLE GAS CO.

The annual financial report of the Nashville Gas Co. is included in that of Tennessee Natural Gas Lines, Inc., since it is a subsidiary of the transmission company. The report, however, is made separately so it is possible to arrive at some comparisons using only the figures for gas distribution.

As with a number of others, there is an unbroken line of increases from 1946 to 1954 in customers, gas sales, and with one exception, in net income.

This steady increase also applies to taxes which in 1954 for the Nashville Gas Company amounted to 18.1% of gross revenue and were 2.3 times the amount of net earnings. The report points out that the taxes for 1954 increased 813% over taxes for 1946. In 1946 total taxes were $122,275 as compared with a $1,116,473 tax assessment for Nashville Gas in 1954.

Returns for the company amounted to about 4% of the investment last year.

OKLAHOMA NATURAL GAS CO.

The annual report of this company has an interesting outline of where 1954 revenues went. In table form it runs:

Cost of gas purchased	26.0%
Taxes (other than social security)	16.1%
Materials, supplies and expenses	15.0%
Pay roll and employee benefits	14.8%
Provision for wear and tear	10.2%
Dividends to stockholders	10.0%
Interest on borrowed money	5.1%
Retained in business	2.8%
	100.0%

The company's operations are conducted entirely in Oklahoma.

Oklahoma Natural was one of a few to increase equipment sales. The report states: "During the year, Oklahoma Natural participated in a national commercial equipment sales campaign to promote the installation of modern gas cooking equipment in restaurants and other eating establishments. Sales of such equipment amounted to $486,000 as compared to $278,000 the previous year when no such campaign was conducted.

"In cooperation with a manufacturer of commercial gas appliances and one of its Oklahoma dealers, a bus was equipped with modern gas cooking equipment and a tour made of eating establishments in the smaller towns. Equipment on the bus was in actual operation so that a live demonstration was given which created a good deal of interest.

"As a result of this successful campaign, the company received an honorable mention award in the A.G.A. national campaign and a special sales plaque from the Southern Gas Association."

The firm made some improvement in air-conditioning sales also: "During the fiscal year, 1012 tons of gas air-conditioning were installed on company lines and included 407 tons of Servel absorption, 550 tons of Carrier absorption and 55 tons of gas engine driven equipment.

"The company now has 29,000 tons of gas air-conditioning equipment connected to its lines, which is an important source of summer revenue when loads on lines are lightest."

During 1954 a total of 321,940 customers (288,994 residential) bought 116,729,736 Mcf. Almost half of this — 56,789,419 Mcf — went to 2166 industrial customers.

Residential customers used an average 98.68 Mcf for the year at a cost of $61.33, a rate of 62.15¢ per Mcf. Commercial rates were 38.58¢ per Mcf and industrial 17.94¢ per Mcf.

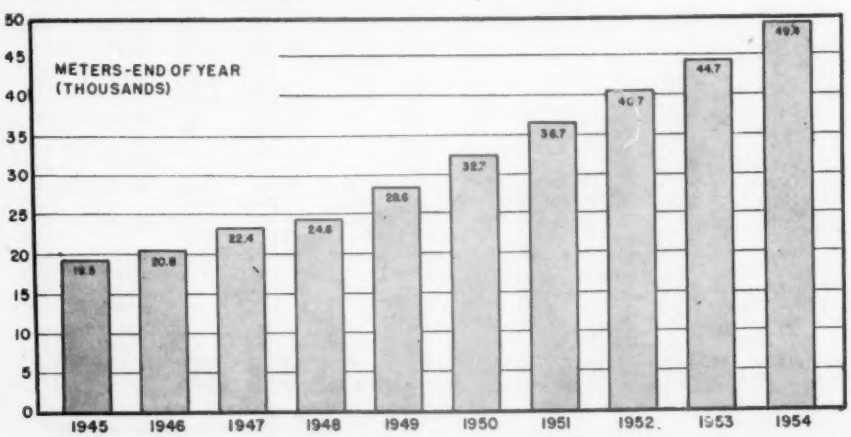
Return on investment in 1954 was 3.7%.

PIEDMONT NATURAL GAS CO., INC.

This company completed conversion from manufactured to natural gas in 1952. It presently purchases 22,560 Mcf per day from Transcontinental Gas Pipe Line for 29.1¢ per Mcf, and has an application for this to be raised to 35,000 Mcf per day.

In 1954 the company had a total of 42,574 customers in North and South Carolina of which 33,763 were residential. Resi-

Meters take an upward step each year...



Mobile Gas Service shows in its annual report the steady climb of meter installations.

dential consumers bought 6,411,879 Mcf of gas during the year.

Piedmont's capital assets made a net income of 4.7% in 1954.

Piedmont is interested in plant expansion. Its report states:

"During 1954 the company spent $1,409,-093 for construction and system improvements. The major portion of this expenditure was to meet the demands of new customers in new areas and to serve additional customers on existing mains. It is anticipated that approximately $1,500,000 will be spent in 1955."

The firm is also pushing appliance sales. Read the report: "The company has an aggressive sales department which sold during the year 3682 gas burning appliances. These sales, along with sales made by gas appliance dealers to our customers, resulted in our residential use per customer increasing 29.9% over 1953. Revenues from commercial sales were 13.7% greater in 1954 than 1953 and as a result of the activities of the sales department the company won for the second consecutive year a National Sales Achievement Award for leadership in promotion and sale of modern commercial gas cooking appliances for companies of similar size, awarded by the Gas Appliance Manufacturers Association."

PIONEER NATURAL GAS CO.

The growth of West Texas is reflected in Pioneer's increases at every economic point. Investment in new facilities is one of its chief problems. As the annual report says: "Net expenditures for plant construction in 1954 amounted to $4,741,000 and it is estimated that expenditures of approximately $10,153,000 will be required in 1955.

"In 1954 the company invested $1,815,-000 in facilities to make gas service available to many more irrigation areas. Sales for irrigation purposes during the year increased $1,299,000. This type of service has met with such a widespread demand that the company already has under way a program requiring investments of approximately $4,750,000 during the year 1955."

Total customers reached 129,541 in 1954, of which 112,522 were residential. These bought 44,138,000 Mcf including 11,299,-000 Mcf residential purchases.

Return on net plant and equipment amounted to 9.2% in 1954.

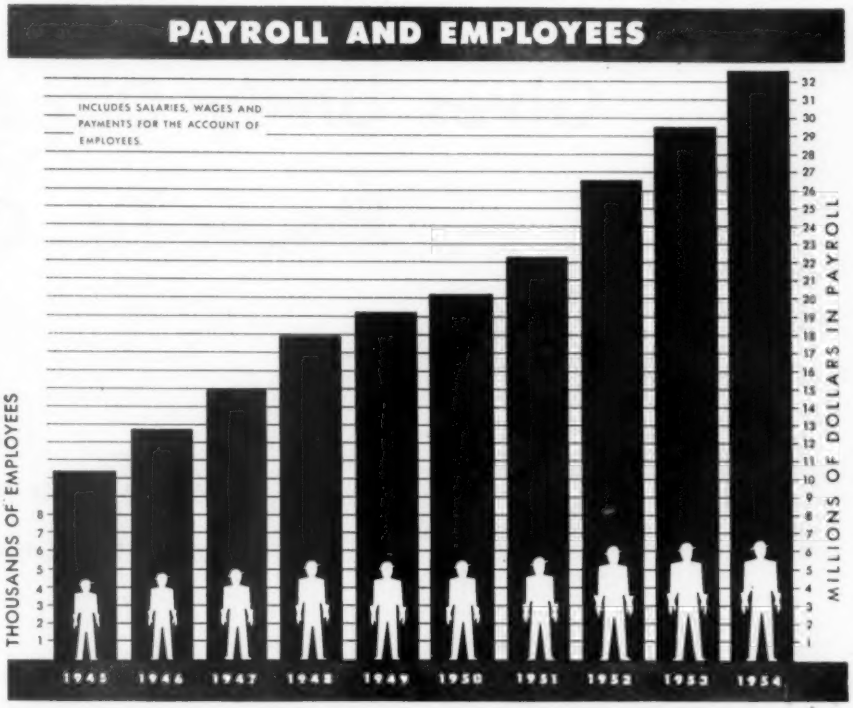
RIO GRANDE VALLEY GAS CO.

"During the year 1954, Rio Grande Valley Gas Company continued to show improvement in sales, net income and earnings per share. All were higher than any previous year. The company's construction program was carried out according to plan, while a strong working capital position was maintained" — thus reported the company to its shareholders.

The company expressed belief that the present year would also be one of growth and development. A substantial part of Rio Grande's report is devoted to conditions in South Texas and the progress in that area.

Total customers December 31 totaled 36,236, exactly 2000 more than the year before, which is a 6% increase. There were 28,896 residential customers, who averaged 40 Mcf with an annual bill of $40.55.

Employees increase — pay and benefits go up faster . . .



United Gas annual report shows how in 10 years employment went up about 50% while salaries and benefits more than tripled.

Percentage return for 1954 was 5.3% of the company's net assets.

SOUTHERN UNION GAS CO.

Southern Union credits its substantial increase in gross and net income thus: "The basic impetus behind the continuing expansion of the company's business is, of course, the strong and diversified growth trend which prevails across the broad areas of its service territory in the Southwest. Measured by the yardsticks of economic progress and of increases in population, the company's service territory includes some of the outstanding regions in the nation."

"Another factor in the improved financial results of 1954 was an intensive economy program conducted by company personnel. Without seeking to skimp on any important function or to defer any necessary project, strong efforts were made to effect savings and to achieve greater efficiencies. An appreciation for the wholehearted cooperation of the employees in this respect is well due."

Total customers served in Arizona, New Mexico, Texas and one Colorado town reached 265,815, which is 6 per cent increase over 1953. Gas sales increased 5,-819,314 Mcf, almost 10 per cent above the previous year.

It was estimated that approximately 40 per cent of the operating revenues came from sale of gas for heating purposes. This means that gas consumption is based upon weather conditions. Southern Union's report mentions the unusually warm last quarter of 1954, which kept sales down.

UNITED GAS CORP.

Much of United's operating income is made by subsidiaries in production and transmission divisions. Its system is in Texas, Louisiana, and Mississippi.

Among accomplishments of United's research, these are some mentioned: "Research work on new gas dehydration methods and equipment was carried forward successfully during 1954 and arrangements for general manufacture and sale of the equipment were completed.

"A new large diameter internal pipe caliper was developed and one major gathering system was surveyed during the year.

"Highspeed computer studies received considerable attention during the year, particularly as to their application to gas volume measurement and accounting, and a procedure for this application is nearly complete.

"A mass-spectrometer for general hydrocarbon analysis was received and installed in 1954.

"The cooperative microwave communication test was finished and the data are now under analysis."

Also "The corporation worked closely with various manufacturers in aiding the development of new and improved applications of gas service. Field testing of new innovations in gas air-conditioning and engineering test work on automatic gas ranges, new ignition devices, and burners were included in this work."

Some 487,000 gas customers include 431,762 residential. The domestic sales reached 26,849,115 Mcf out of a total of 1,084,499,390 Mcf sold.

Natural gas distribution investment amounts to only 12% of the property assets. Overall net profit of nearly $27,000,000 is 5.3% of total plant, property, equipment and other capital investment. ★ ★ ★

Unique Telemetering System

Gives Utility Dispatchers Finger-Tip Control

Mississippi Valley Gas Co. installation is fast, flexible, dependable and economical

• GAS DISPATCHERS of other years, even with smaller loads and less-pressing time factors, must have wished earnestly that they knew, with reasonable certainty, to what extent their systems were balanced at a given time. Indeed, many utility dispatchers still hold with that wish.

A large portion of the distribution system of Mississippi Valley Gas Co., is now equipped so that the dispatcher need only use a telephone-type dial to get distant data on pressure, flow and temperature.

Telemetering is not new, not even new to the gas utilities. But, the Mississippi Valley system has a unique combination of selective calling, time-impulse telemetering and time-multiplexing.

The "silent communications system" has been in operation long enough for the company to determine that it has improved the efficiency and the economics of gas distribution. It can only be assumed that the dial operation has contributed, also, to the personal well-being of the dispatching staff.

Just how well Mississippi Valley dispatchers, at Jackson, Miss., are equipped to get quick-information about their gas distribution system will be apparent immediately in Figures 1 and 2, with a map of the gas system and a block diagram of the telemetering facilities.

This installation has been described as "representing a significant step forward in the techniques of effectively utilizing the flexibility of measuring instruments, telemetering equipment and specially designed communications facilities."

One of the underlying reasons for adopting this informational technique was that

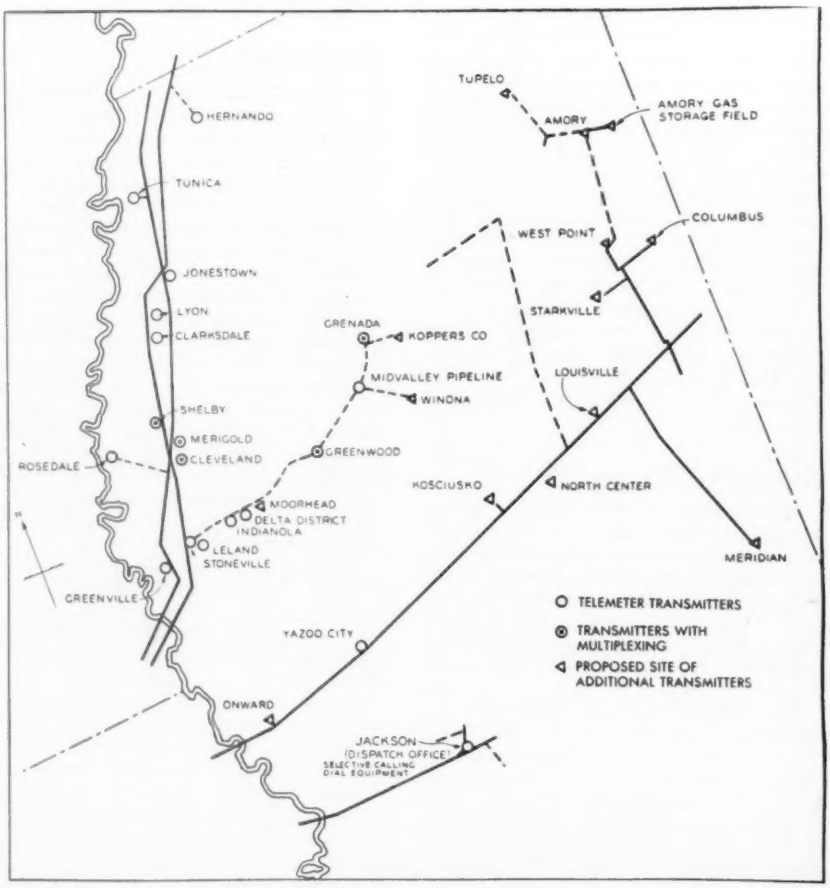
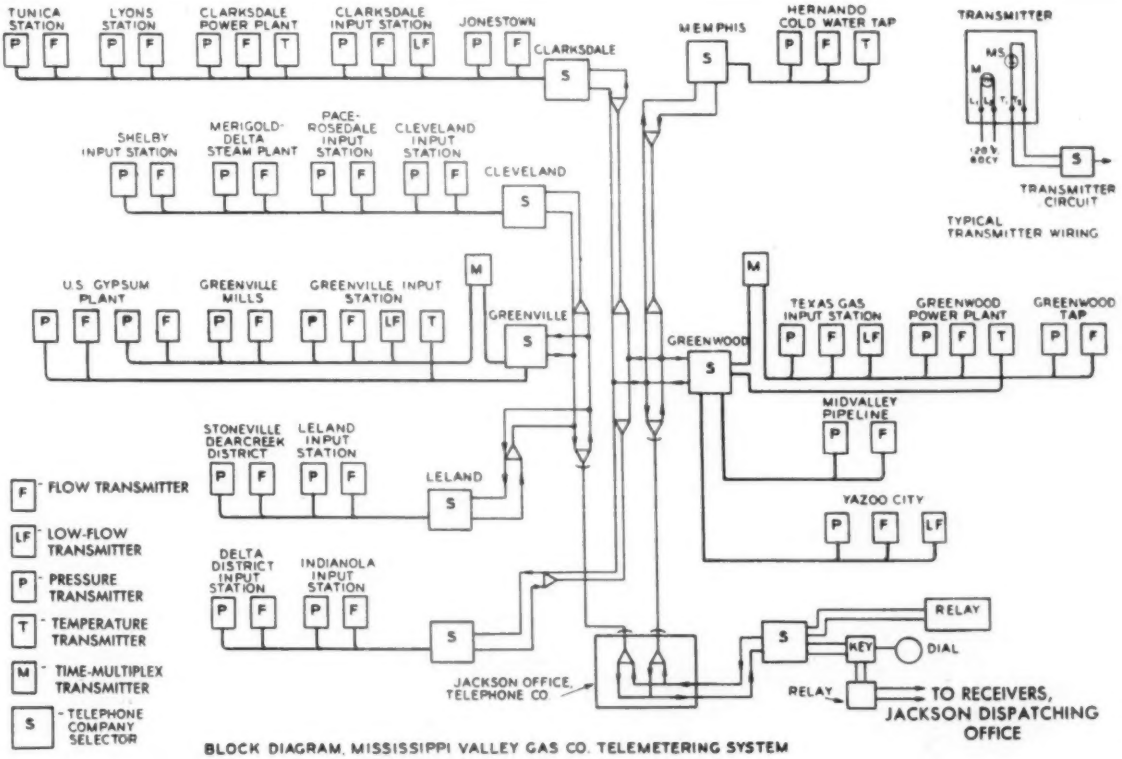


FIG. 1. Distribution system of the Mississippi Valley Gas Company.

American Gas Journal FEATURE



BLOCK DIAGRAM, MISSISSIPPI VALLEY GAS CO. TELEMETERING SYSTEM

FIG. 2.

Mississippi Valley Gas Co., just as so many other utilities, found it essential to insure against exceeding their contract demand for pipeline natural gas, and yet serve their customers in the usual order of preference. With information from the communities and industrial customers served by the company, the dispatchers could plan to curtail or shut off interruptibles, draw from LP storage for mixing. Thereby, Mississippi Valley could avoid the dread penalty rates for excess pipeline gas.

In that respect, the communications system has proved itself, during peak-days. The 40-year Weather Bureau record for the area shows a temperature range from *minus* 12-to-110F, so it is apparent that the peaks can be sharp.

Planning was fully coordinated

In order to achieve its objectives, Mississippi Valley needed a fully-selective telemetering network that would provide approximately 50 reading functions at points throughout the gas distribution system. All were to be read at the Jackson dispatching office. Individual circuits to provide that information involved prohibitive costs.

The coordinated planning by Mississippi Valley, Southern Bell Telephone and Telegraph Co. and The Bristol Co. brought about a solution to the cost problem and developed a technique which is unique in method, distances involved and the built-in flexibility for future expansion to control functions.

FIG. 3. Typical metering point on Valley Gas system, Greenwood, Mississippi. The telemeter transmitters shown are measuring conditions in the pipe line that supplies the distribution system at this point.

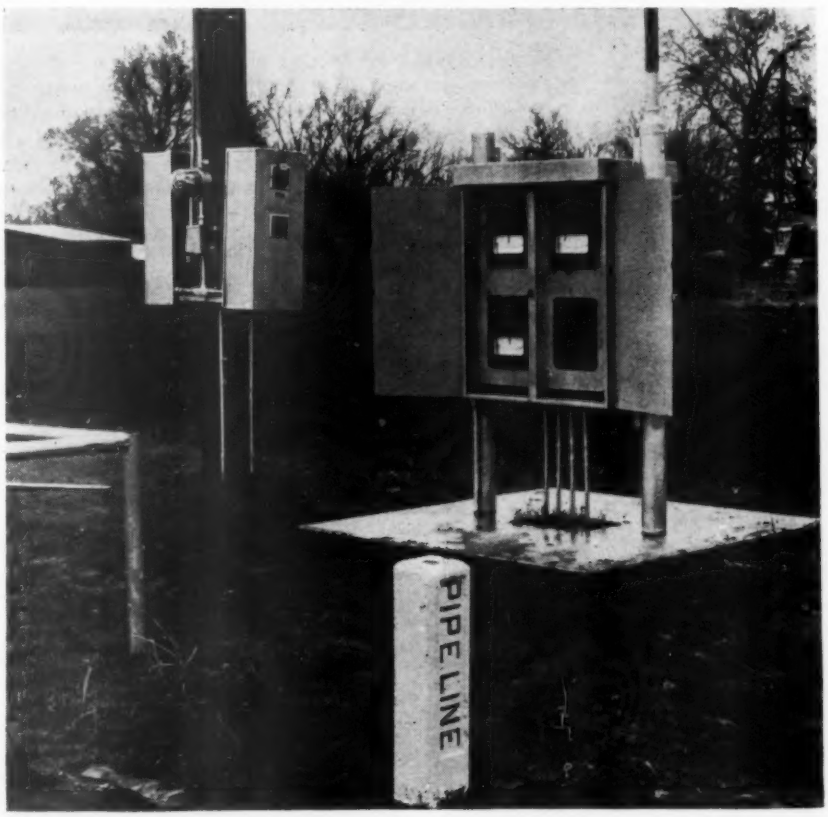


FIG. 4. Instrument panel at the Jackson dispatching office of Indicating receivers are energized when the dispatcher dials the code assigned to a station; the transmitters at the station send the information signals along the telephone circuit to this panel board, where they are indicated. The system of "bulls-eye" lights tell what variable is being transmitted, which instrument to read, and where the measurement is coming from.

Joint investigations by Mississippi, Southern Bell and Bristol developed a layout that concentrated the 50-or-more reading functions in 7 selectors located in telephone company central offices. This arrangement required extensions of a number of the function legs, the circuit between the selector and the Bristol transmitter equipment at the reading points. That was necessary to reach points that were beyond telephone exchange areas and was accomplished with a net saving for Mississippi in monthly rentals of telephone company lines.

The selector circuit was developed to be adaptable to standard telegraph line facilities and repeater equipment and to be compatible with Bristol's impulse-duration system of metering. Multiplexing was provided for in the circuit by using 5-sec timing. The circuit has 90 coded terminals that respond to 2-digit dial codes. Not all these terminals are in use; they were part of the future planning which contemplates remote control functions.

Full control at dispatcher's table

The entire telemetering system is under the control of the dispatcher at his operating table in Jackson, shown in Figure 3. Basically, operation of the system is under the control of a key that has 3 positions: "off . . . dial . . . meter."

With the key in the "dial" position, the dispatcher can dial the appropriate 2-digit code for the information he wants. There is a code for each reading to be taken throughout the gas distribution system. Therefore, a specific code number is valid only for a particular reading at a particular distant point. See Figure 4.

The dispatcher gets a "confirmation" that he has dialed the correct point on the distribution system and is receiving the desired reading, from the lighting of a corresponding lamp signal on his operating panel, when communications contact has been established with the point and the meter.

As the dispatcher shifts the control key to the "meter" position, the incoming telemetering pulses go directly to the registering or recording meter on the operating panel.

The receiver remains connected, continuously indicating conditions at that point, until the dispatcher records the reading, depresses his key, and dials a code for another measurement.

At 2 points in the Mississippi Valley distribution system, the demand for gas is so heavy that the engineers decided that it would be necessary to get 7 readings, in sequence, rather than dialing 7 times to get them. Accordingly, Bristol provided Greenwood and Greenville, *see map,* with multiplex transmitters that would give 7 readings sequentially when a single multiplex code, for each station, was dialed. To match this equipment, the dispatching office in Jackson has a multiplex receiver that directs the incoming pulses to the proper meters on the panel, and in the correct sequence.

The multiplex equipment was modified by Bristol so that there is immediate synchronization between transmitter and receiver, thereby giving instantaneously-correct readings. In some units of this type, there can be a relatively lengthy delay in synchronization of transmitter and receiver, with consequent error in the first sequence of readings.

All points in this telemetering network can be logged in about 15 minutes. Rapid calculations of load conditions are made with a special calculating board in another 15 minutes, leaving 30 minutes for spot checks of critical points or other dispatching operations before the next complete hourly survey of the system.

Results of operation

The operation of this dispatching system has been very satisfactory. The readings check very closely with the delivery figures of the supplying pipeline company. The dispatching operations now possible have been helpful in avoiding heavy demand penalties.

A power plant connected to the Mississippi Valley distribution system uses large blocks of gas during off-peak periods. This telemetering system permits the dispatcher to predict when this gas can be supplied, and in what volume. This increases net sales without exceeding peak demand from the pipeline. Also, having the measurements at hand, allows the dispatcher to direct consumption of other industrial users, who can change to other fuel during domestic peaks.

This installation is the most complete and far-reaching system of selective calling yet installed. In the solution of the problems involved, new pieces of equipment were developed, new ideas and plans of installation and operation were involved. A new system of communication was designed and built for more efficient and more economic gas utility operation. — H.H.C.

Insurance Against Gas Blasts

Stuart B. Eynon
Manager, Leakage Control Surveys
Heath Service Consultants, Inc.

FIG. 1. Typical city system

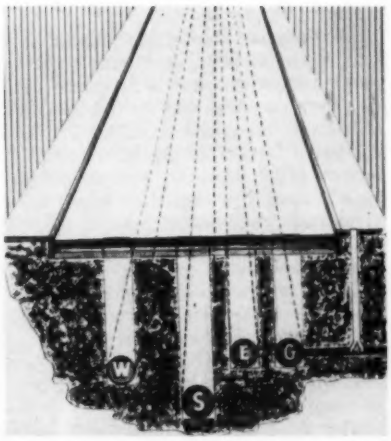


FIG. 2. Cross section of typical business street

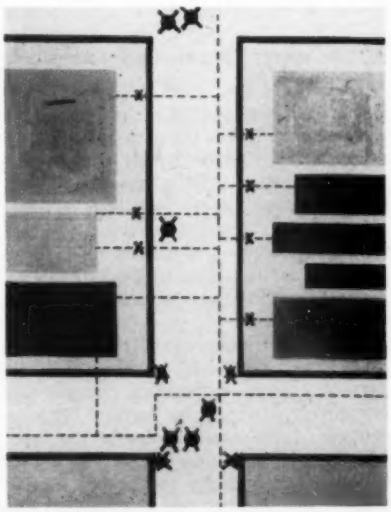


FIG. 3. Typical street in business area

• THERE IS a general recommendation that all gas distribution systems be surveyed annually to detect leakage. Experience has shown that the most efficient type of survey for one property operating under a fixed set of circumstances, is not necessarily the most effective type of coverage for all other gas distribution systems

The basic problems in each remain the same but due to variations — type of gas distributed; area involved: urban, suburban, rural; whether the survey is for gas company or a combination of public utilities in the area — the approach to the problem and the technique employed must, in turn, be varied.

In order to satisfy all conditions, we have developed, through years of research and experience, 4 basic types of surveys.

1. Vegetation-and-soil survey
2. W-type survey
3. LP gas survey
4. Combined utility survey

Numbers 1 and 2 have been designed to provide a complete coverage for the entire underground system of companies distributing either natural or manufactured gas with a specific gravity of less than 1.00.

Number 3 is designed to provide the same over-all coverage for systems distributing LP gases which have a specific gravity of more than 1.00.

Number 4 will provide all public utilities, within a given area, which have underground structures, with periodic reports of the presence of combustible or toxic gases in these structures, and will furnish the operating gas company with an accurate report on the condition of its underground plant and equipment.

American Gas Journal FEATURE

The vegetation-and-soil survey is recognized throughout the United States and Canada as the most efficient yet economical means of leakage detection for those portions of gas distribution systems where sufficient vegetation is present to allow an experienced consultant to conduct a conclusive survey.

Figure 1 is a plan map showing the service area of a typical gas distribution company. The system has been divided into 2 distinct areas by shading. One area represents the residential section of the city, while the other indicates commercial and industrial sections. The leakage control survey, to be conclusive, must include a thorough inspection of the entire system. First consideration will be given to the residential area where vegetation — trees, shrubs, grass — is present. This section of the system is best suited to the vegetation-and-soil survey.

It is an established fact that manufactured or natural gas escaping into soil will displace normal soil atmosphere and destroy the soil's ability to support plant life. The size of the area involved and the extent of damage to the vegetation present depends on variable factors — how long leak has existed, gas volume passing into soil, structure of soil, specific gravity of gas, whether leak is from high or low pressure main, and amount of moisture in soil.

Our consultants, thoroughly trained in plant pathology and physiology, botany and agronomy, and highly specialized in the vegetation-and-soil program, conduct this type of survey by observing variations and symptoms found in both vegetation and soil. The consultant is able to detect gas leakage which, in many cases, is invisible to the layman or even experienced gas men.

How vegetation-and-soil survey operates

The general procedure is: The consultant is driven through the streets in the area

under consideration, at a speed which allows him to observe vegetation and soil from the curb lines to building walls. Whenever he sees abnormal conditions he stops to test the suspicious area with a combustible gas indicator. If gas is found, the extent of the area is determined and the leak is classified as being in one of 3 basic categories.

The A leaks are those with small volumes of gas but with no hazardous condition or potential for property damage; repair can be delayed until more important leaks have been repaired. In the B leaks larger volumes of gas are involved but there is little danger of a hazardous condition or potential of property damage. The C leaks reveal exceptionally large volumes of gas or leaks of such size that create hazardous conditions and may involve injury or property damage. This type of leak requires immediate attention.

A detailed accurate report is made of each location where leaked gas is found. This report provides address, leak classification, condition under which leak occurs and a map of the area involved designating the leak location, plus remarks and other pertinent information.

If vegetation damage is present, a second report is completed with dollar and cents valuation, when requested, of the damage caused by gas in the soil. When abnormal vegetation conditions are encountered, which could be construed by laymen to be caused by gas, and no gas is found, a negative vegetation report is completed which states the cause of the symptoms. Such reports have proved valuable to claim departments of gas companies in handling vegetation damage claims.

In addition to these tests, the consultants make selected tests where insufficient vegetation is present to indicate leakage, plus tests where experience has shown that leakage is apt to develop.

The most efficient manpower unit for this type of work has been found to consist of a leakage consultant and a helper who drives and makes test holes where required. Such a unit can be expected to cover 10 to 12 miles of main per day, but this figure will vary due to individual system condition.

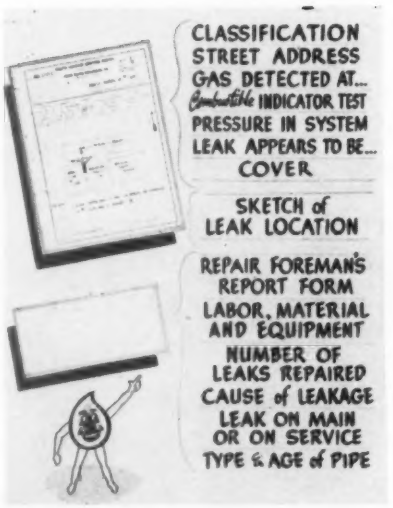


FIG. 4. Field report of street leak location

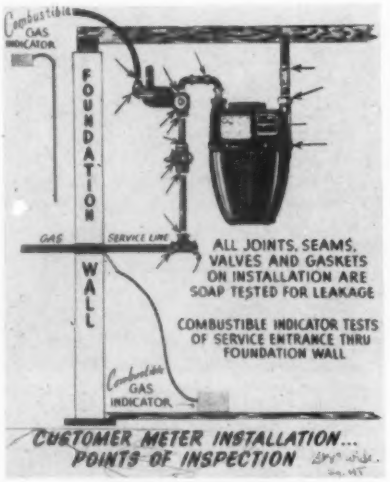

Combustible GAS INDICATOR
FOUNDATION WALL
GAS
SERVICE LINE
ALL JOINTS, SEAMS, VALVES AND GASKETS ON INSTALLATION ARE SOAP TESTED FOR LEAKAGE
COMBUSTIBLE INDICATOR TESTS OF SERVICE ENTRANCE THRU FOUNDATION WALL
Combustible GAS INDICATOR
CUSTOMER METER INSTALLATION... POINTS OF INSPECTION

FIG. 5. Meter installation . . . points of inspection and service entrance tests

W-type survey for paved-surface areas

During the course of the survey, a map is prepared showing the areas covered. This map also indicates the areas not surveyed and which are better suited to the W-type survey due to lack of vegetation.

The W-type survey has been developed to cover the remaining portions of the system, commercial and industrial areas with extensive paving. This survey consists of 2 distinct phases: street inspection and building inspection.

The street inspection phase involves those areas where little or no vegetation is present, and the soil surface, in most cases, is entirely covered by paving. The percentage of the total mileage of the system which falls into this category will vary widely from one city to another. For example, mileage to be covered in older industrial cities may run as high as 40% of the system, modern and less industrialized cities it may run as low as 5%.

In the sketch of a typical street in the business area, Figure 2, note the width of the street and the relatively short distance from the gas main to the nearest building wall. And, observe the number of other underground structures — telephone and electrical conduits, sewer lines, water lines, and possibly steam or oil lines, with the necessary manholes, valves and pits.

The surfacing material, shown in Figure 3, is made up of several layers of pavement on the street, bordered by a curbstone and sidewalk running to the building wall. All these form a rather light top seal for any gas which may be escaping under the street. Natural and manufactured gas, lighter than air, will follow the line of least resistance once it finds its way into the soil. It may spread along a loosely compacted trench, through a porous building wall, or other porous structures, and into manholes, sewer lines or conduits. Free gas-air mixtures in any of these structures present a real hazard, particularly if the characteristic odor of the mixture has been filtered out in passing through the soil. Therefore, the W-type survey has been designed to locate any escaping gas which is venting or may, at some future time, vent into one of these structures.

Experience has shown that, in order to obtain the desired results, a leakage survey of these areas must include combustible gas indicator tests of all available openings such as manholes and valve boxes, plus a sufficient number of selected bar tests to locate any gas present in the soil. Combustible indicator tests in manholes are inconclusive in that they indicate only the presence or absence of gas and do not locate leakage.

Any thorough program of leak detection must include subsurface tests in addition to tests of all available openings in order to locate leaks accurately enough so that crews can seal the openings without further extensive testing.

The actual survey procedure can be shown most readily in a sketch, Figure 3, where the larger crosses designate tests that should be made. The specific test locations must be determined by the men conducting the survey, since no two blocks are identical. The smaller crosses show where positive gas leak indications were obtained. Figure 4 shows a form which is very practical to provide a detailed, accurate and workable report of gas leak locations. Features of the report are:

1. Classification of the leak;
2. Address where gas was detected;
3. If an enclosure, vented or unvented;
4. Pressure in system at leakage point;
5. Leak location on main or service;
6. Surface cover over leak.

More on leak classification

The subject of leak classification was discussed briefly under vegetation and soil surveys, but its importance in the program warrants further consideration.

Gas escaping into soil which is sealed by pavements is particularly hazardous since it will travel exceptional distances in search of a vent. It may find its way into structures such as manholes, valves, conduits, drains and buildings.

Experience in conducting surveys of this type has shown that the most efficient manpower unit for this work is made up of a leakage specialist and an assistant. Transportation, hand tools, combustible gas indicators, and a small highly portable compressor unit comprises the equipment. The compressor is used to make test holes, yet is small and light enough to be readily moved by hand in congested areas. A unit of this type can average from 1 to 2 miles of main per day.

A visual record, showing the results of the leakage control survey, can be of exceptional value in a gas company's overall maintenance program. Most effective is a system map on which leaks are plotted with tanks, color coded according to classification. This is a progress map that is maintained from year to year to provide

specific leakage trends, assist in planning future repair and replacement programs and establish a basis for designing cathodic protection systems.

The second phase of the W-type survey, the building inspection program, consists of complete inspection of the service entrances, regulators and meter sets in all public buildings, and in commercial buildings in the high hazard or fire zone. See Figure 5. This inspection includes a combustible indicator check of the service where it enters and leaves the building wall. Soap tests of all fittings and seams on the regulator and meter also are included. It is advisable to complete a report on each installation, whether or not gas is detected.

The unique factor of this overall safety program is that these surveys will actually more than pay for themselves by reducing the gas volume lost through underground leakage.

Special bar testing for LP gas systems

The LP gas survey was designed to provide the same overall coverage and results for companies distributing liquefied petroleum gas. The problems remain the same, but the procedure and technique employed must be varied to yield the same results. LP gases, as they are distributed, are normally heavier than air and will not rise to the surface where leakage occurs. Leakage cannot be depended upon to show observable symptoms on vegetation, even to experienced consultants.

A specialized pattern of bar testing provides the same comprehensive coverage for LP gas systems as previously discussed for manufactured and natural gas systems. A consultant and a helper can survey 1 to 4 miles of main per day. Nationwide acceptance of this specialized type survey has established that the additional time required is more than justified by the excellent results obtained.

All-utility cooperation on gas safety

Other public utilities experience problems due to the presence of combustible gases in their underground structures. Some of these utilities have recognized their responsibility and have taken steps toward locating and eliminating any conditions that might prove detrimental to their operations. Too frequently, however, it is assumed that the gas company is responsible for hazardous conditions in underground structures. The gas utility is quite often responsible for combustible gas located in manholes or other underground structures and in most cases they assume this responsibility by maintaining regular inspections to eliminate conditions brought about by the presence of any gas.

Considering the matter further, can the gas utility rightfully be expected to assume sole responsibility for any such condition? In many instances, the gas utility has been unjustly involved in adverse publicity. Our consultants are continually finding instances of combustible gas in underground structures that can, in no way, be attributed to the gas utility. Cleaning fluids, gasoline and other petroleum vapors and chemicals leak into the soil or are dumped into sewers. All represent a potential hazard when they find their way into underground openings.

The communications utilities recognize the presence of petroleum vapors in the vicinity of their polyethylene sheathed cables as a definite menace. In the event of a manhole explosion, the evidence generally destroys itself. The gas company, therefore, is assumed to be guilty until it can be proved innocent.

The gas companies were one of the first utilities to put their construction underground. At that time, a small leak on a gas main could exist undetected for a long time and not represent a serious condition. However, if a manhole is constructed where the leaking gas can concentrate, a hazardous situation develops. Neither leak nor manhole individually represent a dangerous situation. The combination is dangerous. In other words, the gas company may be furnishing ammunition while another utility furnishes the gun. The party who fires it, usually is an innocent bystander.

What we are attempting to etsablish at this point is that all utilities should cooperate in assuming responsibility for detecting and eliminating hazardous situations from their underground structures.

The combined-utility survey

Costly duplication of efforts can be avoided and inefficient methods can be eliminated by a combined effort on the part of all utilities involved.

Through recognition of the need for such a service, we developed a combined utility survey.

The scope of this survey includes periodic inspection of all manholes and underground openings in the commercial or high-hazard areas of any community or city. The minimum number of inspections would be 4 each year, with more frequent inspections if conditions warrant. At least once during the year, the periodic inspection would include tests of selected manholes and underground structures throughout the residential sections of the community. Inspections would be conducted by 2 consultants working as a team with a specially-equipped Jeep. Inspections will include tests as required by the character of the underground opening for combustible gases, oxygen deficiency, moisture content, water level, structural defects and any other items required to conform with individual utility policy.

If combustible gas is detected, further tests will be conducted to determine the type of gas and whether or not the gas utility is involved. In questionable cases, samples of the gas from the manhole will be collected for laboratory spectro-analysis. The results of the analysis will be made available to the utility from whose manhole the sample was taken. If a condition warrants immediate action, the consultants will take any precautionary measures for which the situation might call.

Each participating utility will be furnished with a master map and card file showing the locations of their manholes. The date and results of each periodic inspection will be recorded on the card file immediately on completion of the survey. This will provide a permanent and continuous record of the operation. It will also be a reference for the dispatcher sending crews to work in manholes. Manholes suspected or known to be hazardous, will be indicated on the master map. The detailed condition report will be in the card file which will be color-coded for quick identification of hazardous locations.

The master map and card file set up for the gas utility would include all manholes and underground structures of all utilities. When combustible gas originating from the gas company's mains is found in a manhole, the condition will be reported to the gas utility and to the utility in whose manhole the gas is found. All other conditions will be reported only to the utility involved. The exception might be when gasoline, cleaning fluid or other combustible vapors are found in city manholes, in which case the report would be to the fire department.

The cost of service would be shared by the participating utilities. The gas company would stand a fair portion and the balance would be divided among the other utilities according to the benefits derived, probably on the basis of the number of manholes inspected for each utility. Under this plan, the cost of the service to any one utility would be reasonable.

In several cases, city safety engineers and municipal officials have been favorable to the extent that they are considering active participation in sharing the cost of this public safety service.

JAMES B. BLACK IS NOW CHAIRMAN OF PG&E

James B. Black, president, Pacific Gas & Electric Co., since 1935, was elected chairman effective June 1. Norman R. Sutherland was elected president and general manager; Robert H. Gerdes, executive vice president and general counsel.

As chairman, Mr. Black will occupy a position that has not been filled since 1908, following the company's early period of organization. In his new capacity, he will have an active supervisory role in company affairs.

On June 1, Mr. Black will have completed 43 years of service with PG&E and a predecessor company. He has been a director 25 years and president 20 years.

Mr. Sutherland began his career in PG&E 42 years ago as a gas lamp-lighter after school. By 1923 he had risen to the position of commercial manager. In 1945 he was appointed manager, San Francisco division, and 2 years later returned to the general office as vice president in charge of sales.

In 1948 Mr. Sutherland advanced to vice president and assistant general manager; he became vice president and general manager in 1950, and in 1952 was elected a director. He will be the seventh president since PG&E's incorporation in 1905.

How Mississippi Valley Gas Co. Uses

2-Way Radio to Coordinate Work

Fred J. Guice
Chief Engineer
Mississippi Valley
Gas Co.

• THERE'S ONE THING gas companies have in common — their crises won't wait for attention. Whether the trouble is a leaky heater in a customer's residence or a major pipeline break, the gas men need to get there in a hurry.

It was this need for getting there in a hurry that made radio communication attractive to Mississippi Valley Gas Co. more than 2 years ago. From a modest start in 1952, Valley Gas had added radio equipment to reach its present strength of 21 base and 67 mobile stations.

The major purpose of 2-way radio is local control of service trucks. About 95% of the radio calls are between city gas offices and customer service men for routine turn-ons, turn-offs, meter settings, leak testing and pilot setting. Less frequent, but very valuable, are contacts to construction crews in need of information from the engineering department or the system map files.

How is our system different from other utility radio set-ups?

It's our "hole-card," statewide common-frequency operation which knits the 21 local radio systems into a single mobilization network when big trouble arrives.

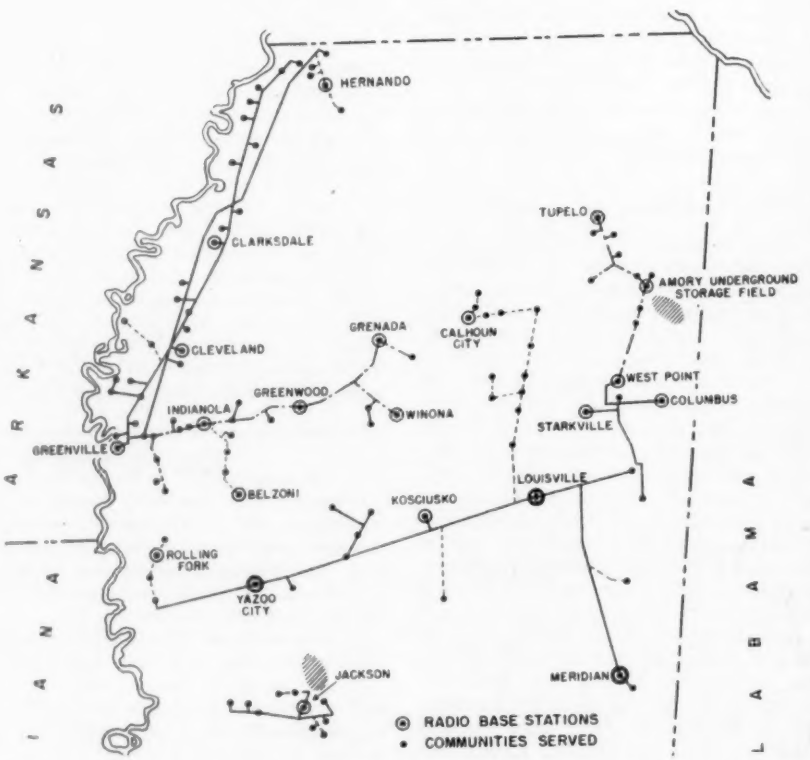
With every truck, supervisory automobile and base station operating on 48.060 mc, it is practical to pull in vehicles from any place in the gas system and integrate them into the local radio net.

This single-frequency feature is a great aid in coordinating operations at widely scattered points. A few weeks ago, corrosion from liquid fertilizer caused a break in our input lines at Clarksdale. By spotting radio-linked trucks at points along the lines, we were able to lower pressures evenly while the repairs were being made.

In this particular emergency, Valley Gas achieved close co-ordination with the mobile units of the supplier, Texas Gas Transmission Corp., by means of mutual monitoring in the field. One of Mississippi Valley's trucks was parked beside a Texas Gas radio truck operating on a different frequency, and pertinent data were quickly relayed from one radio channel to another.

Geography adds another important advantage in having a system-wide common operating frequency. The base stations form a loose oval around our service area. So, in emergencies we have an excellent point-to-point communications chain standing by, ready for instant use. If necessary, company general headquarters in Jackson can take over direction of operations anywhere in the system by means of base radio-relayed messages.

Most of Mississippi Valley's local base stations are simple installations consisting of 60-w Motorola transmitters and receivers connected by coaxial cable to dipole ground plane antennas mounted atop 60′ wooden utility poles. Where the gas company office is located on high ground, the radio stations are locally controlled from our own backyard. In a few cities it was found we could get improved coverage by locating the stations on higher ground a few miles from the offices. In those cases we operate by



Mississippi Valley Gas Company Distribution System.

External trumpet loudspeaker atop this construction truck permits crew to hear radio while at work some distance.

remote control, using leased wire lines between dispatcher and station.

The size of each local radio system varies with the need, from the newest and smallest system at Yazoo City — 1 base station and a single mobile unit — to Jackson, with 1 base, 12 trucks and a supervisory automobile. Jackson's 60-w base station can hear and be heard by almost every other base station in the system, due largely to its 100′ antenna height. At most other stations the antenna tops are approximately 78′ above ground.

We have been asked whether such a radio system can be justified economically on a day-to-day basis. We are convinced it can be, due to the increase in productivity which radio gives to each man and truck.

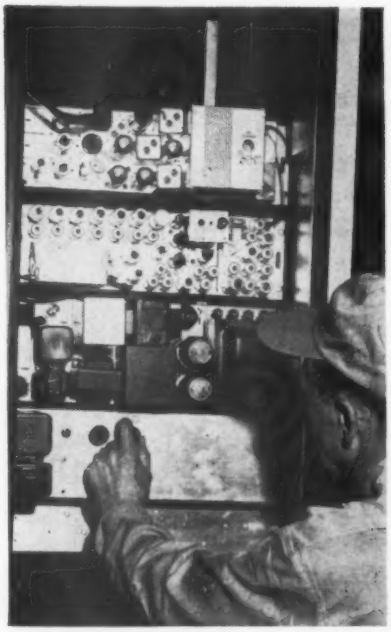
Exact figures on how much the radio systems boost productivity are not easy to compute.

C. C. Taylor, Jackson district manager, has estimated that radio-controlled dispatching enables 10 men to perform the work normally expected of 12 men without radios — about a 20% increase per man.

Mississippi Valley Gas Co. has found many other advantages in having its own private radio systems. While these benefits are difficult to assess in dollar value, their worth will be apparent to every public utility management:

1. Public relations: Radio helps us answer customer calls quickly.
2. Construction crews: A staggering total of man-hours can be lost if a crew has to wait for directions before proceeding with its work. Crews working from a truck equipped with 2-way radio can call headquarters for information. At present, the company is considering eliminating its costly truck map-books and substituting radioed information to construction crews.
3. Overtime calls: With servicemen checking in at each stop, dispatchers are able to clear late afternoon calls more efficiently.
4. Elimination of standby emergency crews: It is no longer necessary to keep a service man on standby status awaiting emergency calls. Radio contact puts all our service trucks on a quick availability basis.
5. Telephone toll calls eliminated: In some cases our trucks work outlying communities under supervision of a central office. Previously, service men checked via long-distance phone calls, they now call in by radio, saving tolls as well as time.
6. Employee teamwork: Our common-frequency operation works like a party line, service men hear both sides of the message and know what is going on. This gives them a sense of belonging to a team and produces a degree of cooperation not possible before radio. It is not unusual to give an order to one man and have another volunteer with: "I'm near there . . . I can handle it."

Final adjustments on the Yazoo City station, just prior to going on the air, are being made here by S. Ray Emerson, Motorola service station operator.



Two years' operation have taught us some valuable lessons. Pipeline breaks don't always occur near the top of a hill where radio reception is best. To increase the range of our emergency control station, Mississippi Valley engineers have equipped a 2-wheel trailer with a 40′ collapsible antenna mast, rigged for easy erection by a built-in winch. The trailer mast can be set up beside a truck; the higher antenna is used instead of the truck's regular mobile whip antenna.

In normal mobile use the radio receivers are heard over a loudspeaker mounted in the truck cab. Construction crews may be working at considerable distance from the truck, however, and beyond the hearing range of the inside speaker. We have added weatherproof trumpet speakers on some of the heavier trucks, mounted atop the cabs. This method means a call to a construction crew can be heard several hundred feet away from the truck when the outside speaker is switched on. Of course, the

Turn to page 48—MISSISSIPPI

Dispatcher W. J. Grasha coordinates the work of 8 service trucks and 4 construction crews through this 60-w Motorola base station at Mississippi Valley Gas Co. headquarters in Jackson.

FISHER Rugged

TYPE 630

FOR INLET PRESSURES UP TO 1500 psi

Fisher's famous Big Joe Type 630 is the best regulator for rugged high pressure jobs. It's ideal for Farm Taps, Small Border Stations, and Industrial Installations. For completely dependable service, there is no regulator like the Big Joe — it's backed by thousands upon thousands of installations along the major pipe lines of this country.

TYPE 620

MAXIMUM OPERATING INLET PRESSURES UP TO 750 psi

(Maximum allowable inlet pressure 1000 psi)

The Fisher Type 620 pounds to pounds regulator is especially designed for *economical* first stage reduction of gas pressure for farm taps on high pressure transmission systems.

Also suitable for industrial gas applications, as a Propane tank reducing valve, and for numerous other installations where good regulation is required on gas service.

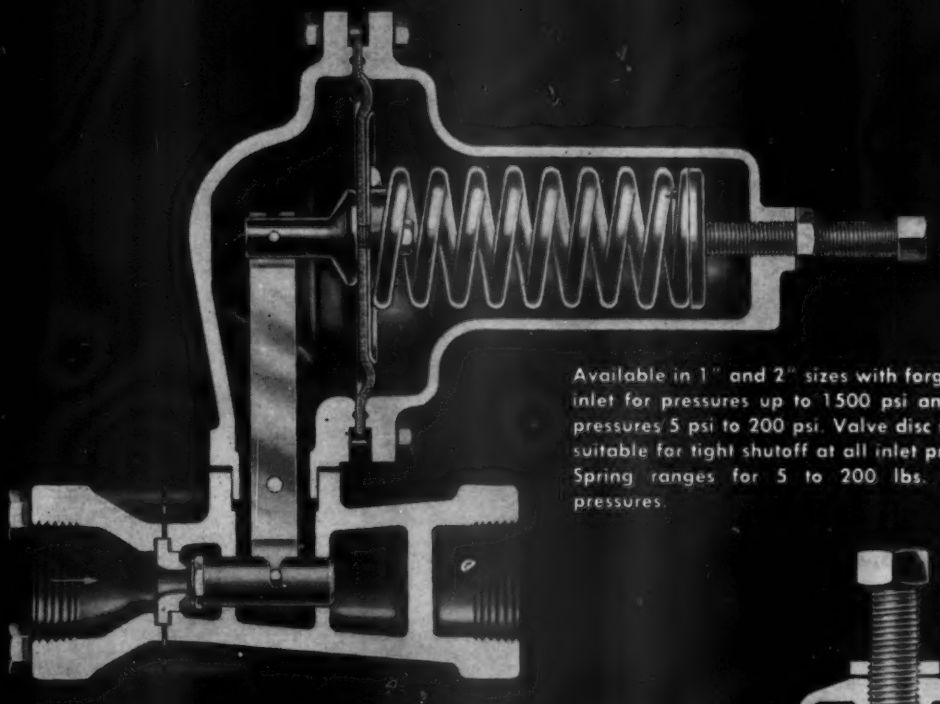
Write for New Fisher Bulletin P-11.

FISHER GOVERNOR COMPANY

LEADS THE INDUSTRY IN RESEARCH FOR

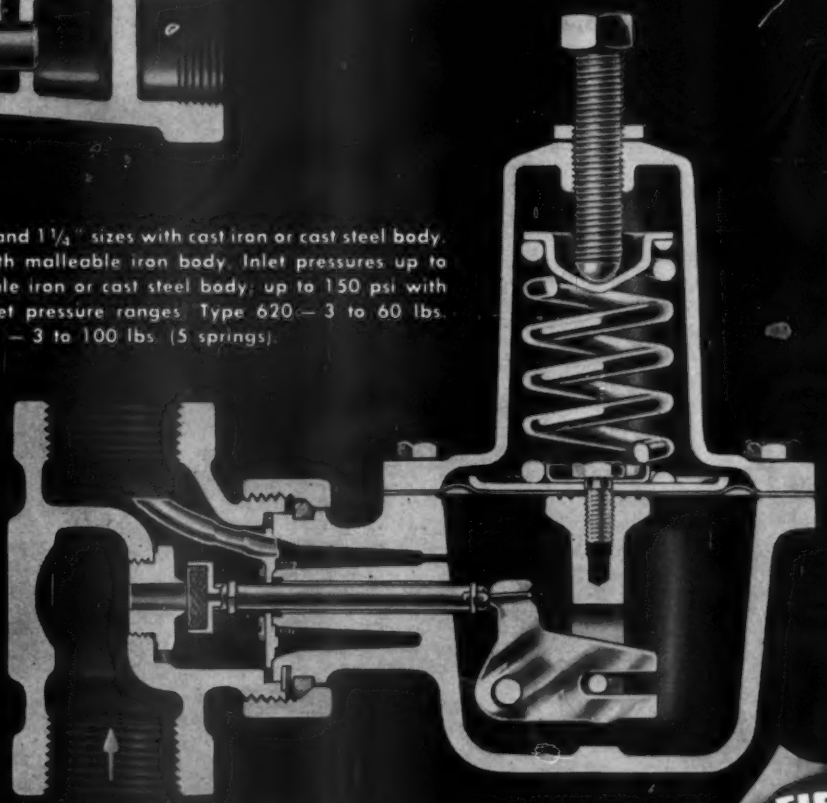
Regulators for High Pressure Jobs

. . . for POUNDS to POUNDS SERVICE



Available in 1" and 2" sizes with forged steel inlet for pressures up to 1500 psi and outlet pressures 5 psi to 200 psi. Valve disc material suitable for tight shutoff at all inlet pressures. Spring ranges for 5 to 200 lbs. reduced pressures.

Available in ¾", 1" and 1¼" sizes with cast iron or cast steel body. ¾" and 1" sizes with malleable iron body. Inlet pressures up to 750 psi with malleable iron or cast steel body; up to 150 psi with cast iron body. Outlet pressure ranges: Type 620 — 3 to 60 lbs. (4 springs). Type 621 — 3 to 100 lbs. (5 springs).



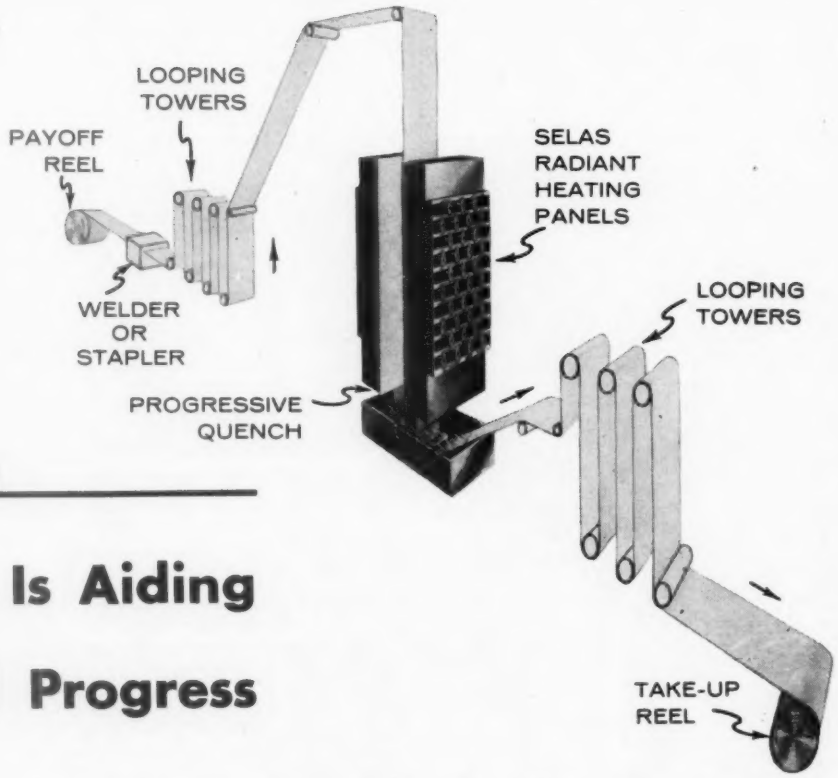
• • • **Marshalltown, Iowa**

BETTER GAS PRESSURE CONTROL

FISHER

Our 75th ANNIVERSARY

FIG. 1. Gradiation single pass annealing process.



Gas in Industrial Processing

How Gas Is Aiding Brass Mill Progress

A customer tells of the cooperation by Connecticut Light & Power and Selas

Dwight L. Somers
Somers Brass Company

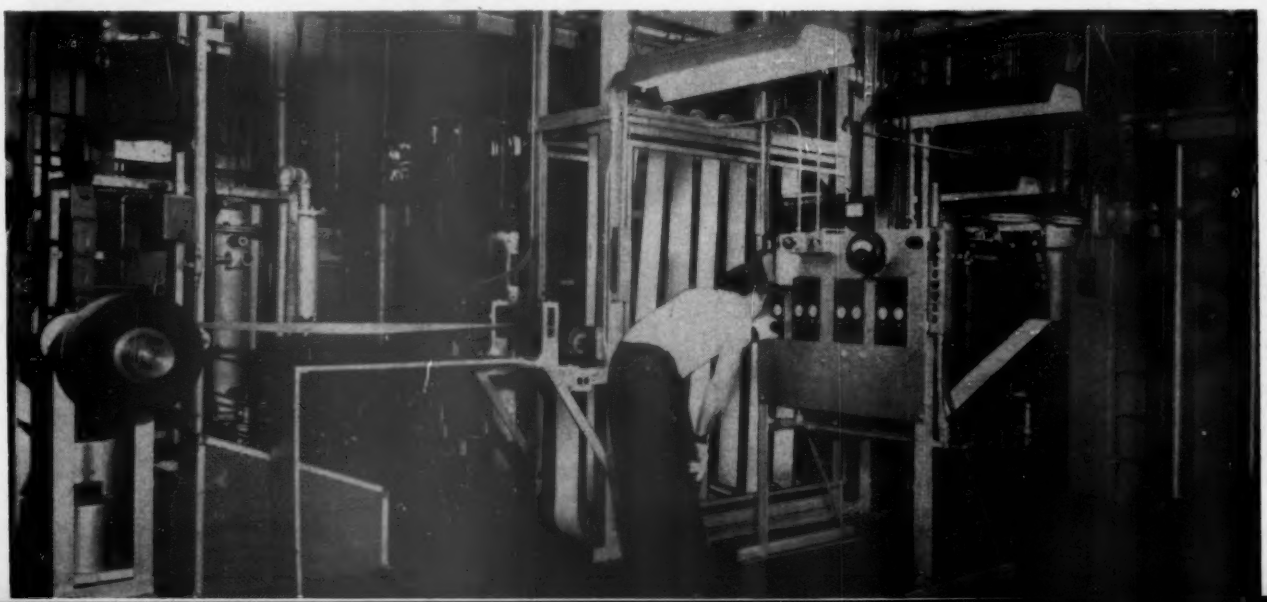
FOR THE SECOND TIME in approximately 20 years, a gas utility and a furnace manufacturer have brought to brass mills a new development of sufficient importance to increase materially both the value and usefulness of our products.

The earlier development brought us inexpensive protective gas atmospheres, and gas fired furnaces to permit clean or bright annealing, displacing wood and oil fuels and reducing or eliminating the costly acid pickling for removing heavy oxide formations. Elimination of part or all of the acid treatment after final anneal enabled us to ship a finer appearing product thereafter.

The present development takes the form of a high speed continuous brass strip furnace. So far as we know, faster than other non-ferrous strip annealers, it not only anneals more uniformly, but is capable of producing a finer grained metal with materially increased ductility. To our customers who make deep-drawn articles, which must later be buffed to a high polish, this new combination of physical properties is most welcome. Because metal is now heated so quickly in the new process, our operators no longer find it necessary to employ specially prepared protective atmospheres.

Somewhat more than 2 years ago, we were visited by the industrial gas engineer from the Connecticut Light & Power Co. and a representative of Selas Corporation of America. They had worked together in

FIG. 2. Exit end of the Selas continuous strip annealer installed at Somers Brass Company. Brass strip is annealed in 11-foot high vertical heating panel, in a single pass, for as short as 4 seconds heating time.



solving a production problem in a neighboring brass mill, by utilizing open radiant gas burners to drive off roll oil and preheat strip entering an annealing furnace.

They informed us that increased uniformity and improved physical properties had been obtained from a new radiant high speed continuous strip annealer introduced to the steel industry by Selas, and asked whether we would consider testing the suitability of the method to our brass strip. These "low pressure salesmen" acknowledged the inevitable problems attending such new developments, but presented laboratory annealed brass samples with physical properties superior to those attained in conventional processing.

We began a series of investigations, which included further tests of pilot run samples and a trip to one of the steel mills where the radiant high speed strip furnaces were operating successfully. The desire to secure these improved physicals for our production metal, along with a confidence in both gas company and process developer, encouraged us to make an affirmative decision.

It was agreed that the installation would be a joint venture by Somers Brass Co. and Selas Corp., with free interchange of information along the way.

Operation of gas-fired continuous line

The new annealing line was designed and installed as shown schematically in Figure 1.

In this new continuous method, a single strip of brass, 0.004"-to-0.020" thick, is fed into the annealing furnace at speeds to 190-fpm, and that is currently the fastest in the brass industry. The time for actual heat exposure is less than 10 seconds.

The strip runs successively from payoff reel to stitcher to looping towers, through furnace and quench, to looping towers and take-up reel. The exit end of the line is shown in Figure 2. Looping towers or looping pits are required to store metal for maintaining continuous rates of travel through the furnace, when coils have been stopped for attachment to or removal from, the line. Because line speeds approach 200-fpm, in the lighter gauges, each tower must be able to pay out or take up 50' of strip during a 15-sec pause, for example.

The heart of the new annealing process lies in the central unit which heats and quenches the brass strip as it moves vertically downward. This unit consists of a pair of separate rail-mounted and facing refractory panels, each studded with furnace-type Duradiant burners. See Figure 3. With fuel input rate automatically proportioned to rate of strip travel, utility gas and air are mixed slightly rich and compressed in a Selas combustion controller. The mixture is fed to burners, individually valved and group manifolded, through suitable devices to protect against flashback and undue gas pressure reduction. With furnace panels operating several hundred degrees above stirp annealing temperatures and with burner valves adjusted to maintain lateral temperature uniformity *in the metal itself*, the brass strip is heated in a few seconds and then quickly cooled through a progressive steam and water quench—without success to the air at oxidizing temperatures. Neither does the hot metal touch any solid object, eliminating undesirable marks and scratches.

FIG. 3. View at top of Selas annealer at Somers Brass Company, with the two vertical panels parted, to expose the Duradiant burners which are the source of heat.

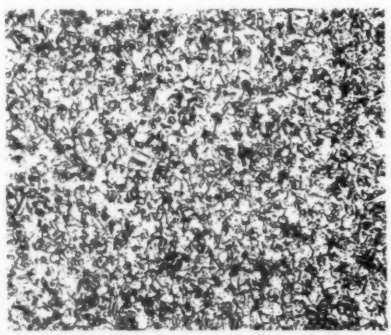
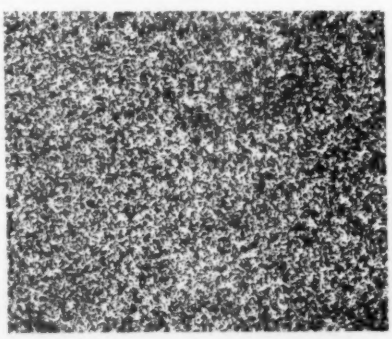


FIG. 4. Grain size comparison of 85-15 brass from high-speed continuous anneal and batch anneal. Above coarse grain, former method; below, fine grain, Selas method.



Our new gas-fired continuous annealing furnace does not require externally-prepared protective atmosphere, since the products of combustion are nonoxidizing to copper and its alloys. The combustion controller maintains an air-gas ratio that prevents free oxygen in the products. Furnace gases consist of nitrogen, water vapor, carbon dioxide, carbon monoxide and hydrogen. The tight construction of the furnace permits operation with a positive pressure that excludes infiltration of air.

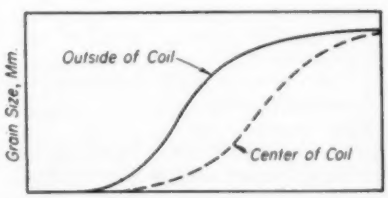


FIG. 5.

The photomicrographs of Figure 4 compare the different grain sizes secured from high speed continuous anneal and conven-

Turn to page 48—BRASS

Industrial and Commercial Gas Sales Conference

H. A. Sutton . . .
assistant sales manager-gas
Public Service Electric & Gas Co. (N. J.)

. . . said

To promote the sale of our services for cooking, baking, water heating, refrigeration, space heating and other heating applications in the commercial field, we seek personnel with:

1. A high school education . . . including mathematics, general science or physics and chemistry;
2. Succesful sales experience or definite sales ability;
3. Good business judgment;

Ability to . . .

4. meet people and engage their interest;
5. analyze customers' requirements, write appropriate reports and make proper sales presentations;
6. cooperate with other departments and allied interests (manufacturers, dealers, plumbers, etc.);

Should . . .

7. be aggressive, ambitious, alert and intelligent;
8. be dependable;
9. have an affable personality;
10. have good physical appearance and good character.

Must . . .

11. be able to follow instructions and schedule productive time profitably.
12. meet the company's general requirements (such as health, age, etc.).

Now, where do we find men with these qualifications. In our case, almost without exception, we find them in our company. Since the group was formed, nearly 30 years ago, only a few men have come from outside the company and in the last 20 years all have been transferred from other positions to that of commercial sales representative. They have become available primarily through application or recommendation by district office management. Most have come from the residential sales group, although several other commercial office departments are represented.

MUCH HAS BEEN SAID and written about "manpower" in the industrial and commercial departments of gas utilities . . . type of man, background, performance, company position and compensation. From the cross-industry viewpoint, too little has been done about this tremendously important load-and-revenue factor.

A noteworthy panel discussion at ference on industrial and commercial American Gas Association's sales congas, last month, had as its subject, selection and training of manpower for those utility departments.

The company policies expressed by 3 panelists established that their companies — and there are others — have elevated viewpoints of the positions of industrial and commercial gas. As more-and-more utility managements adopt the policy that these categories — and, particularly, industrial — deserve the best-possible sales engineering, the base for raising the technological utiliziation of gas will broaden. And, as gas is used for its technological advantages, it can (will?) be sold on the justifiable premise that it is a premium fuel—not a cheap dump fuel.

[Now planning, for future issues of GAS JOURNAL, is a series of technical feature articles that will exemplify the opportunities that are available for industrial utilization of gas.]

Currently the procedure . . . follows this pattern:

1. Commercial office employees are acquainted with general qualifications and duties of sales specialists jobs and are invited to apply if they think they qualify and are interested in sales jobs.
2. The employee submits application and educational record.
3. He confers with manager of his office; manager determines whether, in his opinion, applicant measures up to standard for position.
4. If decision is affirmative, he forwards application and educational record with his recommendation to sales promotion manager, who refers application and records to us [sales department.]
5. If we are satisfied, representative of sales promotion department will interview applicant. Interview follows patterned interview form used for residential sales personnel and has objective to determine sales aptitude.
6. If applicant's rating is passing, we are notified and arrange for personal interview with applicant, at which we determine whether he has all qualifications for position of commercial sales representative. If so, applicant is notified and told he will be considered when opening occurs.
7. When opening occurs, all applicants who have qualified are interviewed and choice made.
8. If, in this procedure, there is negative decision, applicant is notified and no further action is taken.

Under this prodecure we have had no difficulty in securing men, in fact we have so far had more qualified applicants than jobs. Usually it requires some time to make a transfer since provision must be made to replace the man being transferred; however, our manpower needs can be anticipated far enough in advance so that this time is not a serious factor.

The training of commercial sales repre-

sentative covers a 6-weeks period and includes:

1. Introduction to commercial sales department;
2. Outline of training program;
3. Review of industry: historical, our company, our service;
4. Manufacture, distribution and utilization: includes one day at gas plant, 5 days in distribution and utilization;
5. Combustion;
6. Heat;
7. Atmospheric burners and controls;
8. Fuel and energy costs, comparisons;
9. Commercial market;
10. Competition for market;
11. Function of commercial sales representative;
12. Commercial appliances: function, use;
13. Commercial use of domestic equipment;
14. Sanitation and hot water;
15. Apartment house water heating;
16. Commercial space heating;
17. Commercial selling and sales aids;
18. Dealer relations: visits to dealers' show rooms;
19. Manufacturers' representative: 6 days;
20. Field work with experienced commercial sales representative;
21. Policies, procedures, records and reports.

A schedule is prepared for each trainee showing time, subject, location and instructor. During training, a close check is kept on progress of trainee. The check quiz method is used for each subject, where applicable. Every effort is made to be sure there is complete comprehension of information given. Upon satisfactory completion of training program, representative is assigned a specific territory.

To promote sale of our services for industrial heating operations, we require men with all qualifications mentioned for commercial representatives, *with the added qualification that candidate must have an engineering degree or equivalent scholastic and technical training.*

Our current procedure for the selection and training:

Under direction of our educational department, we established a sales engineering course. This is 2-year course and provides for our needs for industrial fuel men but also for lighting and power sales representatives.

The respective sales departments determine number of men required each year and notify educational director. Educational director or his staff working with placement directors at colleges arrange to interview seniors who are candidates for engineering degrees and who are interested in sales engineering. These interviews are conducted at schools, usually in February and early March. Following these interviews, men judged to be qualified and acceptable are invited to our office for further interview with sales department management. When all persons concerned are agreed on candidate, he is offered job and given reasonable time to accept or decline. If he accepts, a starting date is agreed on, at which time he must pass physical examination. Starting dates, of course, are after graduation, usually in June or July.

While most candidates are obtained directly from graduating classes, this not only source of industrial manpower. They can come by transfer from other jobs within company, from direct application, through engineering societies and other sources.

All men accepted for sales engineering cadet course take the same course. However, they know in advance the phase of sales to which they will be assigned on completion of course. During training period they are assigned to and directed by educational department.

The 104-week training period is divided:

Electric department	27
Gas department	13
Commercial department	16
Other general office assignments	6
Sales department	
General office	26
District offices	16
Total	104

Assignments to departments are on individual, no group basis, except in certain sales department assignments. Training is largely observation and discussion, with some job participation. Each departmental assignment is broken down to cover every phase of operation.

When these men come to my department for industrial and commercial sales training, we get them as a group because our part of the training is conducted on a class room basis. Many subjects we cover are handled by experienced field personnel, distributing work so that no one person has to devote full time to training. Outlines are prepared by each man invited to talk to cadets, and a check quiz is given at end of talk.

During entire training period, cadets are required at conclusion of each assignment to submit report on work of that department. These reports serve as a guide to progress being made by cadet, and bring to light any misconceptions. There are also periodic personal interviews.

Upon completion of cadet course, men are transferred to district office and assigned territory.

. . . 2 observations:

1. If men are selected with care and training is thorough you can be assured of capable and successful representatives.
2. Encouragement and opportunity for further improvement in knowledge and ability should be available for all commercial and industrial representatives.

Carl Wierum . . .

industrial sales manager
The Brooklyn Union Gas Co.

. . . said

When vacancy occurs in industrial section, it can be filled by company trainee, provided one is available. Each year, company selects number of recent college graduates for training. A trainee who has engineering degree, or in some cases if he has only 2 years of engineering and B.S. degree, would be considered eligible for further training in industrial sales.

If no company trainee is available, personnel department would be asked to call in recent engineering graduates from schools in vicinity. It would be stipulated that candidate should have degree in mechanical, chemical or industrial engineering. The industrial sales manager interviews applicants and makes selection. Candidates should have a personality and inherent aptitude for selling, appreciate its importance, and be willing to learn and apply sales techniques. We also make use of aptitude tests, called Activity Vector Analysis. Personnel department has been trained in application and operation of this test. When new man is hired, he is given title of junior engineer.

If hired for job (not trainee), a quicky course in other departments is arranged lasting 6 weeks to 3 months. This is to familiarize new employee with other phases of our business; we find that industrial sales section needs to work in close cooperation with other departments.

The junior engineer is assigned to industrial service group to acquire fundamental knowledge of basic industrial process equipment. He learns about gas-air mixing equipment, temperature controls, safety pilots, burner applications, high pressure boilers, ovens, furnaces, etc., from nuts-and-bolts angle, learning to make fundamental adjustments himself.

Meanwhile, he is given reading material. We also ask some experienced manufacturers' representatives to make calls with a new man, and his detailed training is frequently supplemented by visits to plants of equipment manufacturers in our vicinity.

After 3 to 4 four months with service group, he is assigned to accompany senior industrial engineers on daily calls. He will spend perhaps a month with each of 4 such seniors.

The new man is sent to the first AGA industrial school occurring after his assignment to industrial section, for one-week intensive course. If this course occurs during preliminary training, so much the better.

If not, but after suitable interval with seniors, industrial sales manager will review his performance, attitude, etc., and prepare a short written examination, based on AGA courses, modified for local conditions.

When man is considered qualified, usually in less than one year, he is given a territory, at first a small one with less concentration of industry than some others. Expansion of territory to include more important industrial accounts, then depends on subsequent performance.

Continuity of training is considered important, apart from new men. Through weekly meetings, talks by manufacturers' representatives, AGA material such as information letters, occasional AGA committee assignments, frequent reading of

Turn to page 47—SALES CONFERENCE

Price Indexes: Gas, Other Fuels and Electricity

(1947-1949 = 100.0) Source: Bureau of Labor Statistics, U. S. Department of Labor

	1955	1954											1953	
	Jan.	Dec.	Nov.	Oct.	Sept.	Aug.	July	June	May	April	Mar.	Jan.	Dec.	Jan.
GAS														
Space heating	117.3	116.4	115.7	115.5	114.6	114.5	114.4	114.3	114.5	114.1	113.9	113.6	113.6	108.9
Non-space heating	111.1	110.6	109.8	109.7	108.8	108.8	108.9	108.8	108.9	108.8	108.8	108.8	108.8	106.4
Natural														
10 therms	101.0	100.9	100.6	100.5	99.4	99.5	99.9	99.7	100.0	99.9	99.9	100.0	100.0	98.3
25 therms	115.8	114.8	113.9	113.7	112.3	112.2	112.5	112.3	112.6	112.3	112.3	112.2	112.2	108.9
Manufactured														
10 therms	111.2	111.1	109.5	109.5	109.5	109.4	109.2	109.4	109.4	109.4	109.4	109.4	109.5	106.9
25 therms	110.6	110.5	110.3	110.3	110.3	110.2	109.4	109.6	109.5	109.6	109.6	109.6	109.7	107.8
Mixed														
10 therms	96.4	96.4	96.4	96.4	96.4	96.4	96.4	96.4	96.4	96.4	96.4	96.4	96.4	96.2
25 therms	100.4	100.4	100.4	100.4	100.4	100.4	100.4	100.4	100.4	100.4	100.4	100.4	100.4	100.0
All types combined														
10 therms	106.4	106.3	105.6	105.6	105.0	105.1	105.2	105.2	105.3	105.2	105.2	105.3	105.4	103.5
25 therms	115.5	114.7	113.9	113.8	112.7	112.6	112.7	112.6	112.8	112.6	112.6	112.5	112.5	109.6
ELECTRICITY														
Composite	105.5	105.5	105.5	105.2	104.9	104.8	104.8	104.5	104.5	104.5	104.5	103.8	103.8	104.4
SOLID FUELS														
Bituminous—All sizes combined	120.4	120.2	119.9	119.4	118.7	117.9	117.4	117.2	117.2	119.5	120.6	120.7	120.6	119.8
Anthracite—All sizes combined	130.9	129.8	129.2	128.5	126.5	126.4	124.7	124.1	123.1	130.2	135.0	135.0	135.0	135.9
PETROLEUM														
Fuel oil No. 2	125.0	124.2	121.2	121.0	118.8	118.5	117.7	117.7	118.1	120.6	122.1	121.9	120.9	116.6

Sales Indexes: Gas and Electricity

To ultimate consumers by Utilities and Pipelines

Seasonally adjusted (1947-1949 = 100.0) Sources: American Gas Association and Edison Electric Institute

	1955		1954											1953	
	Feb.	Jan.	Dec.	Nov.	Oct.	Sept.	Aug.	July	June	May	April	March	Jan.	Dec.	Jan.
Gas	216.9	206.0	198.3	195.7	190.0	171.7	178.8	180.6	180.2	176.2	174.9	183.2	194.8	173.6	172.9
Electricity	184.0	180.1	178.7	175.0	175.9	173.1	175.6	177.7	174.6	168.6	164.8	162.1	161.5	159.1	147.9

Shipments: Residential Appliances

(000 units) Source: Gas Appliance Manufacturers Association

	1955		1954											1953	
	March	Feb.	Jan.	Dec.	Nov.	Oct.	Sept.	Aug.	July	June	May	April	Jan.	Dec.	Jan.
Ranges															
Gas	217.0*	193.9*	152.9	145.7	174.0	197.1	203.9	179.4	134.5	174.3	163.8	172.4	137.0	134.4	169.2
Electric	—	145.4	156.2	97.2	90.7	96.4	113.8	86.8	91.4	98.1	94.5	106.0	116.4	84.4	124.8
Water heaters															
Gas	259.6*	214.7	200.0	166.8	179.1	202.0	205.5	207.1	190.3	206.7	195.6	200.8	164.4	141.9	189.9
Electric	—	75.4	62.4	49.4	57.1	63.7	80.4	66.1	66.6	73.0	69.8	70.0	53.9	44.3	62.3
Furnaces, gas	58.2*	46.1*	50.7	50.3	64.3	79.0	82.0	75.4	53.1	57.3	49.9	43.6	31.0	33.5	31.1
Boilers, gas	5.2*	3.7	3.7	Note †	7.0	10.8	10.9	8.9	6.0	6.2	6.0	4.3	2.9	3.1	2.7
Conversion burners	7.7*	6.4	5.2	9.2	16.0	32.2	35.9	29.4	19.9	19.7	22.5	14.7	8.8	8.4	9.7

* Preliminary totals. † GAMA is reevaluating all 1954 data on boilers.

Index of Yields: Selected Utilities Stocks

Expressed as percentages

	1955			1954											1953
	April	Mar.	Feb.	Jan.	Dec.	Nov.	Oct.	Sept.	Aug.	July	June	May	April	Jan.	Jan.
Transmission companies	4.04	3.94	4.01	4.25	4.27	4.40	4.40	4.17	4.17	4.25	4.04	4.08	4.15	4.21	4.04
Transm. and distrib. companies	4.80	4.91	4.87	5.00	5.08	4.69	4.70	4.61	4.67	4.88	5.01	5.01	5.11	5.39	5.02
Manufactured & mixed companies	4.71	4.72	4.48	4.57	4.88	4.72	4.38	4.16	4.26	4.36	4.45	4.46	4.67	4.66	4.87
Class "A" electric companies	4.25	4.36	4.07	4.13	4.20	4.37	4.46	4.36	4.31	4.31	4.60	4.64	4.70	4.92	5.08
Class "B" electric companies	4.57	4.60	4.55	4.68	4.72	4.69	4.77	4.74	4.70	4.78	4.83	4.94	4.94	5.14	5.19

This is a straight arithmetical index of comparative yields obtainable on selected gas and electric utility common stocks. The companies comprising this index were selected by AMERICAN GAS JOURNAL as providing a cross-section of each industry. No effort has been made to weight the average to give effect to changes in capitalization or in dividend rates because yields afforded on issues reflect such changes. The index is designed to show rate of return and not necessarily market movements of stocks comprising it. Index is compiled from: transmission companies, 5; transmission and distribution companies, 5; manufactured and mixed gas companies, 4; class "A" electric companies, 4; class "B" electric companies, 5.

Optimism in Corporate Activities Justifies Bright Predictions

By John F. Falvey
Financial Editor

A SHARP TURN-ABOUT in corporate thinking as to the possible scope of further expansion has been witnessed in recent weeks. The original expectation was new plant expenditures for 1955 would be in line with 1954's $22½-billion. The annual McGraw-Hill survey of industry now indicates that plant expansion in 1955 will hit $29½-billion. This is a new high and constitutes an increase of fully 5% over last year's capital outlays.

Going beyond this year, the survey notes, companies willing to estimate beyond 1955 state they expect capital expenditures to reach an even higher mark during the four years from 1956 through 1959.

The recent announcement by Ford Motor Co. that it planned to invest $625-million for expansion over the next three years parallels thinking expressed in the McGraw-Hill survey by the main body of general business.

These management opinions as to their companies' expansion plans tie in closely with the results of two other surveys recently conducted by two separate and distinct groups. Of 5,864 members replying to a questionnaire distributed by the United States Chamber of Commerce, no less than 85 per cent stated that they expected their companies' sales this year to better, and certainly in no event equal, 1954 figures. The survey made jointly by the Federal Reserve Board and the University of Michigan disclosed that consumers planned sharp increase in spending this year for new homes and for basically all other items.

Basis for optimism with respect to realization of at least part of the foregoing favorable predictions is the present economic trend. Gross national product hit an all-time record rate of $369-billion in the first quarter of this year against the previous high of not quite $365-billion in 1953. The second quarter has started off like another record beater; and in a recent study entitled "The Outlook for Business for the Remainder of 1955," National Securities and Research Corporation predicts that gross national product for all of 1955 may reach $377-billion.

Mortgage financing undergoes change

One of the key factors in this estimate is the rate of home building, which in the first quarter of 1955 was running at an annual level of 1,400,000 units. This prodigious building rate, which has exceeded one million homes in each of the past six years, has brought to 14,255,300 the number of new homes constructed in the past 25 years, against an estimated formation of 17,796,000 new family groups.

Warning against what he termed "madman financing" in the buying of new homes, often with no down payment and with the mortgage term reaching 30 years, Herrell De-Graff, Babcock professor of Cornell University, told the 1955 Management Conference of the Savings Association League of New York in April that "a slight economic disruption could wipe out the thin cushion existing in such mortgages and result in distress sales of homes. Directors and officers of lending institutions who participate in such financing are contributing to a potential break in values and disruption of the whole housing industry."

That the insurance companies are not alarmed at the situation, however, is shown in their willingness to go heavily into the commercial banks for new temporary funds with which to buy in new supplies of home mortgages. Previous to the 1954 year-end, life companies limited their new investments to the total of their current accumulations of cash. A number of them subsequently have gone in for "warehousing" of mortgage investments with commercial banks.

This is done because the inflow of funds into life insurance companies and savings banks is not large enough to absorb the huge volume of mortgages now being offered them. Hence, arrangements are made to have commercial banks take up blocks of mortgages and carry them for a period, probably a year or less, at the end of which time they will be taken over by the insurance companies or savings banks entering into the commitment.

Warehousing mortgages gains acceptance

The fact that institutions are willing to enter into these commitments reflects strong doubts that the mortgage supply will continue to be so ample. It also indicates doubt about the duration of any rise in interest rates.

Were these institutions confident that the supply of mortgages would remain quite ample, they presumably would be more inclined to avoid long-term mortgage commitments now, because wider discounts and higher interest rates could then be expected on mortgage loans made next year.

According to estimates, close to half a billion dollars has been borrowed recently from commercial banks by life insurance companies temporarily loaded up with as much real estate mortgage paper as they can buy out of their current fund accumulations. True, not all the insurance companies are agreed on the soundness of this prodcedure, but enough companies have undertaken it to give it pretty wide acceptance in the industry.

At a time when all looks rosy for the economy, it would not do to overlook certain factors. One is that consumer debt has reached a new all-time high mark. Short and intermediate term debt, according to Federal Reserve indices, now has exceeded $30-billion, for the first time. Long-term debt — represented by mortgage on one to four family homes — has gone past $75-billion, also for the first time. Thus, what is more properly described as "family debt" exceeds $100-billion in the aggregate.

Small wonder that the rapidity of the increase has given rise to words of warning by leading economists. It is true that a large part of the increase in such debt constitutes a shift from renting to ownership of homes; but as family debts mount it is time to put in effect a program of taking periodic stock of the situation to determine the possible future effect on the economy.

One thing is certain — consumer and home mortgage debt service now represents as high a proportion of disposable incomes as ever before in history, even allowing for lower interest rates and for elimination of rent.

This does not automatically mean that family debts today are too high — only the future trend of the nation's economy will determine this. If personal incomes remain stable or if they should rise, the existing level of family debt could be serviced without difficulty. On the other hand, however, should the trend of disposable income trend downward, then it is quite possible that the present high volume of personal indebtedness could prove to be quite burdensome.

Family debt increases; collections decrease

As the volume of debt increases, the total of savings tends to contract. The proportion of disposable income saved amounted to 7.1% in the final quarter of 1954, according to Department of Commerce. This compares with 8.6% saved in the final 3 months of 1953.

Whether the total of home mortgage debt has reached proportions that could possibly bring unwelcome consequences, only the future can tell.

But it is obvious that the rise in family debt cannot be sustained at its very rapid post-war pace for very much longer. And when the rate of debt increase slackens, it will have some dampening effect upon the economy and make it more susceptible to other recession influences that may appear.

While on the subject of family debt, it might be mentioned that unpaid bills of the average household are piling up. The American Collectors Association reported early in April its bill collection index, which stood at 91.5% in December 1954, had fallen to 79.1% in March 1955. This is a substantial decline in a short time.

While the size of payments being made on past-due accounts is slightly higher, the Association said, the average family has more bills on which it is unable to pay anything.

This is something which a utility company might well bear in mind as it scrutinizes its accounts receivable items, especially those arising from sale of appliances, and as it scans the economic horizon to determine for itself what the future may hold for various facets of the nation's economy.

INDEX OF YIELDS:
SELECTED UTILITIES STOCKS
See bottom of facing page.

Courts Distinguish Between Damages And Compensation in Employee Cases

by Leo T. Parker
Attorney at Law

"WHAT ARE THE LEGAL DIFFERENCES between compensation and damages to injured employees?"

This is the basic law: Under both Federal and state compensation laws an employee may recover compensation for injuries and diseases, irrespective of testimony tending to prove that if the employee had used "ordinary care" he may have avoided sustaining the injury. So no employee can recover damages from his employer unless he proves that the injury resulted from the employer's negligence. Thus state compensation laws are primarily intended to compensate employees for injuries and sickness under almost all circumstances, providing the injury or sickness was sustained while the employee was working within the scope of his employment. However, this law is not applicable to suits filed by employees against gas company for damages.

For example, in Barksdale v. Silica Co. Inc., 137 S. W. (2d) 901, it was disclosed that an employee contracted the occupational disease of silicosis and he filed suit against his employer to recover damages.

The employer produced testimony showing that a state law provides that an injured employee must file his complaint or suit within three years from occurrence of the injury or disease. Since the employee had not filed a complaint until 9 years after his employment had begun and, also, since expert witnesses testified that silicosis is a disease not contracted in less than 5 years, the higher court refused to award the employee damages, and said:

"First, the testimony offered by expert witnesses is that silicosis is a disease which is not contracted within a shorter period of time than 5 years, and that the average time for its contraction, as shown by the experiments of the Labor Department and Bureau of Mines, ranges from 8 to 12 to 15 years, the great weight of American authority is to the effect that the cause of action arises and the statute of limitations begins to run from the date of the negligent act and not from the time the full extent of the injury may be ascertained."

The importance of this decision is apparent when it is realized that legally the date on which a disease is contracted is not the date the employee realizes that he had contracted the disease, but it is the date he first became subjected to the danger of contracting the disease. Therefore, if state statutes specify that an employee must make complaint, or file suit, within one year from the date of occurrence of an injury, or occupational disease, the employee is without recourse or legal rights in a damage suit if he was subjected to contracting the disease more than one year before he filed the suit.

Another important point of law decided by the higher court in the above case relates to "assumption of risk." The term "assumption of risk" is applicable only where an employee elects to sue his employer to recover damages for an injury instead of accepting compensation specified under the state workmen's compensation act.

Obviously, no employee may be prevented from recovering damages for an injury or illness resulting from negligence of his employer, the gas corporation. On the other hand, an employee who performs dangerous work automatically forfeits his right to sue and recover damages from the gas company.

For example, in a leading higher court case an employee filed suit for damages contending that the employer negligently supplied him with a defective respirator. In refusing to allow damages to the employee, the court said:

"We concur that plaintiff (employee) had assumed the risk."

Therefore, no employee is entitled to recover damages from a gas corporation where the evidence indicates that the employee realized the danger associated with his work, and the employee failed to use prudence and caution to avoid the injury.

A review of higher court cases disclosed that an employee is not entitled to recover from a gas company damages if he is injured (1) while he is acting outside the scope of the regular employment; (2) or while he acts in disobedience to his employer's instructions; (3) or he fails to use ordinary care to protect himself against the injury; or (4) if he quit his regular work and is injured while performing some act for his own benefit and not associated with the employment; or (5) if he is injured while off his employer's premise without authority.

For instance, in Zurino, 291 N.W. 637, it was shown that an employee was injured during the noon hour while riding in the foreman's automobile from his regular place of work to a restaurant where the employee intended to eat lunch. In holding the employee not entitled to compensation, the court said:

"At the time of the accident plaintiff was doing nothing in which the employer was concerned. Plaintiff, like the other employee, entirely ceased performing any part of his service when he left the place where he and the others had worked during the forenoon."

On the other hand, this court explained that the employee may have been entitled to recover compensation if the employer had furnished the employee transportation to and from the place he ate lunch. In this respect, the court said:

"It exclusively appears that incident to plaintiff's employment it was neither expressly nor impliedly understood he would be provided by defendant (employer) with transportation to or from the place where he ate his noonday lunch. In conveying plaintiff to the place where he was to eat, the foreman was merely doing a friendly act."

Distinctions explained

A review of late higher court cases discloses that gas companies are legally bound to provide reasonably safe working conditions for employees.

On the other hand, if it can be shown to the satisfaction of the court that an employee received an injury through his own negligence, the gas company is liable. However, under all circumstances employers are expected by the law to exercise "ordinary care" to prevent injury to employees. And, employees are expected by the law to use "ordinary care" to protect themselves against injury. Therefore, the legal meaning of the term "ordinary care" is an important consideration in a majority of controversies involving injuries to employees.

Broadly, the term "ordinary care" means that degree of care that would have been exercised by persons of average intelligence and prudence under the identical circumstances of the injury. Therefore, where a gas company is sued for damage and the employee is successful in proving that he exercised "ordinary care" to prevent the injury, he materially improves his chances of obtaining a favorable decision.

On the other hand, the law seems to be well settled that when neither the employer nor the employee realized that a dangerous condition existed, and the condition was not generally recognized as being dangerous, the employer is not legally negligent and, therefore, it is not liable in damages for the resultant injury.

Circumstances important

Another important point of law is that certain circumstances a gas company's employee may not be entitled to recover either federal or state compensation for sickness or an injury. If, for example, the testimony indicates that the disability did not result, within provisions of compensation law, and the employer was not negligent the employee may not recover either compensation or damages.

For example, in a leading case (261 N. W. 506), it was shown that state compensation laws provide for compensation payable exclusively to "workers." An employee was injured but the court refused to allow compensation on the ground that he was not an "ordinary" worker, but at times was employed in the office. Since the injury was not caused by negligence of the employer, the court held that the employee was not entitled to recover any damages for the injury. And since the court strictly construed the state compensation law to protect only "workers," it refused to allow the employee any compensation under the state workmen's compensation act.

Notification important

All states have statutes specifying the

Turn to page 49—COURT RULINGS

AMERICAN Gas Journal FEATURE

Gas Industry NEWS

OVERBECK ELECTED COLUMBIA VP ENGINEERING-RESEARCH

John E. Overbeck has been elected vice president, engineering and research, Columbia Gas System Service Corp. Mr. Overbeck was assistant vice president in the engineering department. In his new post he succeeds Charles F. de Mey, who died in February.

John E. Overbeck

Mr. Overbeck has been with Columbia Gas System since 1916, when he joined The Ohio Fuel Gas Co., a Columbia subsidiary, as a measuring station operator. His later jobs have been foreman, senior measurement engineer, and suprvisory engineer. He was elected assistant vice president in 1952.

In 1953 he received American Gas Association's national distribution achievement award in recognition of his contributions to the industry.

BIG PIPE PROCESSING YARD OPENED BY PG&E

Ready-to-install pipe with diameters to 12" are beginning to come off Pacific Gas and Electric Company's new Decoto pipe yard assembly lines.

The plant will process all pipe used by PG&E throughout northern and central California. When pipe is delivered, it is put through the assembly processing line to be dried, pellet-blasted and then given 3 enamel-and-felt coats before being stored on racks for shipment.

The plant eventually will have a capacity of between 40,000' and 50,000' per day. The plant will represent an investment of more than $800,000.

During regular operations, a staff of about 35 men will be stationed at Decoto. This may be increased to about 50 during peak periods.

The plant is situated on a 30-acre site with much of the area devoted to storage racks. The steel-framed main building is 336' long and 140' wide.

PROMOTION COUNCIL FORMED BY HEATING-COOLING GROUP

The Better Heating-Cooling Council for the promotion of hot water and steam heating systems in residential construction has been formed by a group of equipment manufacturers and related interests.

Paul K. Addams, president, Fitzgibbons Boiler Co., was named president. Robert W. Lear, general marketing manager, plumbing and heating division, American Radiator and Standard Sanitary Corp., is vice president and Robert Ferry, general manager, Institute of Boiler and Radiator Manufacturers, is secretary-treasurer.

Other Council members include Robert S. Rickabaugh, president, Convector Manufacturers Association, H. Leigh Whitelaw, managing director, Gas Appliance Manufacturers Association, and Robert A. Locke, president, Steel Boiler Institute.

The Council will sponsor an industry-wide education and sales promotion program about the advantages of the many modern, economical hot water and steam heating systems now on the market.

N. C. STATE OFFERS SHORT GAS TECHNOLOGY COURSES

North Carolina State College's department of chemical engineering will conduct 2 four-week courses in gas technology, June 13-to-July 9 and July 18-to-August 13. An additional course will be offered August 15-to-September 10 if there is sufficient demand. The college extension division instituted the short courses in gas technology in 1953.

Instructors are Frank Seely and C. A. Plank of the chemical engineering faculty.

Students will receive technical information about the various gases, their properties, behavior, and problems of manufacture and transportation; instruction in maintenance, installation, and repair of gas appliances; training in safety practices and public relations.

The short courses are open to men in and out of the gas industry. A tuition fee of $100 for the four-week course covers all text and laboratory materials. Room on the college campus is $14 for the month. Enrollment for the courses is limited to 30. Students will be accepted in the order of their registration.

Included on the short course education committee are C. E. Zeigler, Public Service Co. of North Carolina; J. J. Sheehan, Piedmont Natural Gas Co.; C. B. Reinschmidt, South Atlantic Gas Co.; Eugene Leier, South Carolina Electric and Gas Co.; John M. Thorn, Commonwealth Natural Gas Association; E. V. Bowyer, Roanoke Gas Co. and W. K. Nussbaum, Savannah Gas Co.

J. P. HAPP REJOINS NORTH SHORE GAS

Jerome P. Happ has rejoined North Shore Gas Company in Waukegan, Ill., as general sales manager. Mr. Happ was sales manager, Peoples Water & Gas Co., Miami Beach, Florida, where he also was a director of Gas Institute of Greater Miami. Prior to moving to Florida, he was a sales executive in the North Shore Gas Co. appliance sales department.

Mr. Happ now will direct residential, commercial and industrial gas sales and advertising of the company.

WALL IS NEW PRESIDENT OF PIONEER NATURAL GAS

Pioneer Natural Gas Co. directors have elected C. I. Wall as president and K. B. Watson as secretary. All other officers were reelected.

Mr. Wall has been with Pioneer and one of its predecessor companies, West Texas Gas Co., since 1927. He became president of West Texas Gas Co. in 1951. When Pioneer was formed in 1953, he was named vice president of distribution, and in 1954 became executive vice president. Currently, Mr. Wall is president of Southern Gas Association.

Mr. Watson has been associated with Pioneer and Amarillo Oil Co., a subsidiary, since 1952. He was assistant attorney general of Texas. He will continue to serve the company as attorney.

New directors elected to the board were Mr. Wall and Maurice E. Purnell. They succeed George Baird and M. D. Snyder, who will remain with the company in a management advisory capacity.

Other officers of the company are: H. R. Budke, vice president, distribution; Thomas F. Cartwright, vice president and treasurer; A. F. Cox, vice president, engineering and gas supply; T. S. Whitis, vice president, transmission, and J. L. Pratt, assistant treasurer and controller.

ASME RELEASES NEW SECTION ON PRESSURE PIPING CODE

A revised section 8 on gas transmission and distribution piping, ASA B31.1, has been released by American Society of Mechanical Engineers. This section was prepared by a 72-man committee, comprised of recognized experts, which devoted nearly 3 years of intensive effort to this project.

The new section of the code has been approved by American Gas Association, ASME and ASA.

It establishes safe standards in design, fabrication and installation of gas transmission and distributing pipeline systems. It also covers the safety aspects of inspection, operation and maintenance of gas pipelines. Included also are gas compressor stations, metering and regulating stations, mains and services to the customer's meter.

Its requirements have been deemed to be more than adequate for safety under all normal conditions encountered in the gas industry.

The committee that prepared the section is pursuing further studies on gas industry safety problems.

M. K. WRENCH HEADS MID-WEST GAS

M. K. Wrench, operating manager, Metropolitan Utilities District, Omaha, is the 1955-56 president of Mid-West Gas Association.

Mr. Wrench was elected to succeed M. B. Cunningham, superintendent of gas distribution, Iowa Power and Light Co.

The Mid-West Gas Association, with approximately 600 members in Iowa, Nebraska, Minnesota, North and South Dakota, Montana, Wyoming, and Colorado, is the second largest American Gas Association affiliate.

Saves 6 men, 4 tampers, 2 compressors and small dozer with one-man-operated "80-W"

VAN DOREN BROTHERS of Richmond, Virginia recently backfilled and compacted approximately two miles of trench, 2 feet wide and 4 feet deep, for a 6-inch gas line with just one man and one machine, a Cleveland "80-W" backfiller.

Before the Van Dorens purchased their "80-W" they used 7 men, a rubber-tired dozer, 2 compressors and 4 air-driven tampers for backfilling and compacting on jobs of similar size and type. The one-man-operated "80-W" did the complete job in less time than the 7-man crew formerly required on comparable jobs. "It's a great time saver," was F. M. Van Doren's comment on its performance.

On a previous job their Cleveland backfiller had saved them considerable time and money on a 12-inch water line trench, averaging approximately 6 feet deep, by its unique ability to backfill spoil deposited on a down slope on the far side of the trench, while simultaneously tamping it to the state of Virginia's rigid compaction specifications.

The "80-W" also does an outstanding job of side-crane work, lays pipe, pulls crossings, sets hydrants and valves, pulls sheathing, loads and unloads pipe, etc. Despite its ability to perform all these operations—and do an outstanding job on *each* of them—the "80-W" is easy to operate. The Van Dorens' operator learned to operate it with high efficiency after only two days training on the job.

Investigate this remarkable time, labor and machinery saving tool now—so that you, too, can realize its outstanding benefits on your next job.

See your local distributor for the full Cleveland story or write direct to:

THE CLEVELAND TRENCHER COMPANY • 20100 St. Clair Ave., Cleveland 17, Ohio

CLEVELAND

PG&E PROPERTY TAXES SET NEW RECORD

Annual property taxes paid by Pacific Gas and Electric Co. totaled $41,272,764 in 1954, another record for the state's largest inividual property taxpayer. PG&E's taxes bettered last year's high more than $5,686,000.

The figure was only a portion of the total tax bill for the PG&E, which reached to $103,886,000. This amounted to nearly $12,000 an hour, every hour in the year.

Of the total taxes, the largest share went to the federal government, $53,900,000. Local property taxes were the second largest. Then came the state with collections of $4,699,000, local franchise payments of $2,099,000 and $1,906,000 for city and state sales and use taxes.

School districts, last year's largest recipients of the property tax monies, gained more than $2-million this year but yielded first place to the county treasuries. The counties collected $18,323,000 and the schools $17,833,000. Cities received $2,629,000 and other districts $2,100,000. The tax payments represent 25.3% of revenue.

ENGLEBRIGHT ELEVATED BY HONOLULU

At annual board meetings, Honolulu Gas Co. and Pacific Refiners, Ltd., elevated A. E. Englebright to their respective presidencies.

Mr. Englebright has served with the 2 affiliated companies in the capacity of vice president and general manager since 1948. He succeeds E. E. Black who became chairman of the 2 companies.

SOUTHERN COUNTIES TO BUILD LOOP

Southern Counties Gas Co. has requested permission from the California Public Utilities Commission to construct 31.5 miles of 30" pipeline between Cactus City and Desert Center in Riverside County.

The $2,500,000 project would complete "looping" of "Biggest-Inch" along the 210-mile stretch from the Colorado River to Los Angeles. Investment for the project brings Southern Gas Co. 1955 budget to more than $16,000,000, making it the largest annual outlay in the utility's 44-year history.

The Texas pipeline system in 1955 will provide about 65% of the primary gas supply of Southern Counties and Southern California gas companies. The two utilities own the line jointly.

NORTON OPENING CALIFORNIA PLANT

A new $1-million grinding wheel plant is to be opened next January at Santa Clara, Calif., by Norton Co.

The new plant will manufacture a full line of vitrified, organic and diamond wheels.

George A. Garrison has been named plant manager.

WASHINGTON COMPANIES MERGE

Cascade Natural Gas Corporation, Seattle, has purchased the stock of Consolidated Gas Co. which distributes manufactured gas in Yakima Valley communities. The merger was approved by Washington Public Service Commission.

IRON SPONGE

for high efficiency gas purification at high pressures

Iron Sponge is your key to sulfur-free gas at minimum processing cost. Iron Sponge has high efficiency at low pressures or at today's high presures and high temperatures. It absorbs *more* H_2S, gives long service between foulings, and is easily regenerated. Investigate it for your purification problem today!

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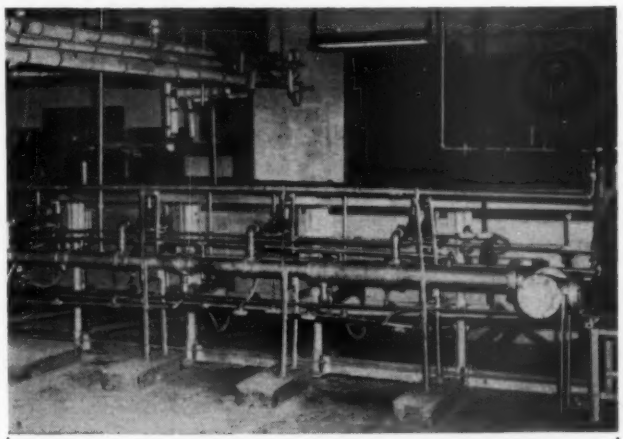
Elizabeth, N. J. • Los Angeles, California



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Increased production for smaller ovens. Combination of radiant heat and convection give greater results in less space.

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Red Ray Manufacturing Co., Inc.

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KA-MO DRILLS

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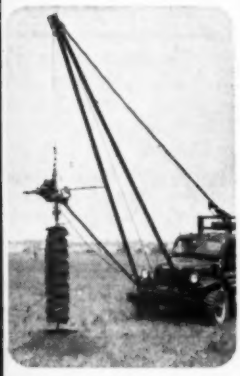
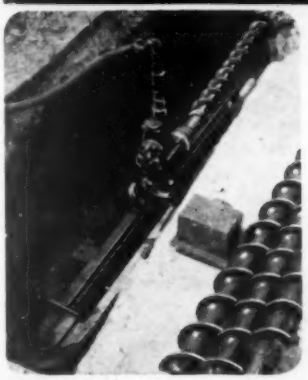


FOR—oil and gas pipelines, gas and electrical services, etc.
With or Without Casing
With no interruption of traffic.

HORIZONTAL BORING



UNDER streets—
highways—
alleys—
sidewalks—
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NEW Gas Industry EQUIPMENT

Polyvinyl Pipe Tape—MM&M

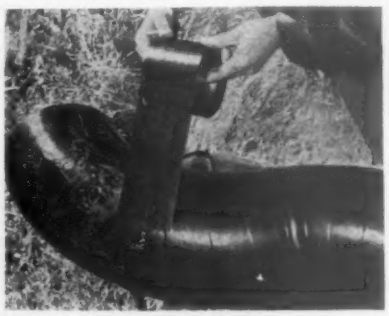
An all-weather, polyvinyl chloride pipe wrap tape featuring increased adhesion and conformability even at freezing temperatures has been announced.

The plastic tape is an improved version of the firm's Scotchrap pipe insulation and is stated to be the first pressure-sensitive, polyvinyl chloride tape formulated exclusively for pipeline corrosion prevention.

The new material was under development for more than 2 years and was then field-evaluated by 2 large distribution systems for a year. Experience has shown that the new tape can satisfactorily be applied in temperatures as low as 0 F, according to the manufacturer.

The tape features an improved adhesive that sticks better at all temperatures employing a built-in corrosion inhibitor identifiable by its green cast.

The all-weather tapes are expected to find increased use for wrapping above-



ground and buried pipes in such applications as pipelines and gas mains, wherever corrosion is a problem.

It is recommended for wrapping all small-diameter pipe; for wrapping sections of uncoated pipe, both new and reconditioned; for resealing or repair jobs; and, for wrapping joints or couplings on mill-wrapped pipe.

Two tapes are available: No. 50, which is 10 mils thick for use in wrapping fittings and wherever maximum conformability is necessary; No. 51 is 20 mils thick for straight-run wrapping. Rolls come in 100' lengths and in widths of 1", 2", 6" and 12".

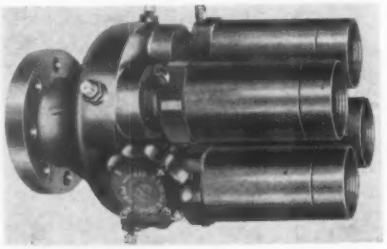
Scotchrap, No. 50 and No. 51. Minnesota Mining and Manufacturing Co., Dept. E584, St. Paul, Minn.

LP Relief Manifold—Bastian-Blessing

This is claimed to be the only LP gas relief valve manifold that provides full protection through a single opening for 30,000 gal. tanks. The unit is listed by Underwriters' Laboratories.

Four complete valves are provided in the manifold, with any 3 affording a combined capacity of 27,750 cfm, air, adequate for a 30,000 gal. tank.

Because of a patented shut-off system, one relief valve can be removed for test or

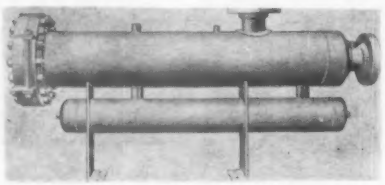


replacement at any time without affecting the operational performance of the storage tank or the other 3 relief valves. Construction of the big manifold is said to be rugged and heavy duty throughout; the body is cast steel while the relief valves are steel with brass liners.

RegO 7564 Relief Valve Manifold. RegO division, Bastian-Blessing Co., 4201 West Peterson Ave., Chicago 30.

Gas Filter-Scrubber—Perry

This natural gas scrubber and filter is said to have been designed for removal of sub-micron-sized particles from pressurized gas streams. The unit is described as being applicable to distribution systems. Glass fiber elements, replaceable, are used in particle-filtration. The unit also operates as a vapor block, by coalescing mist on the filter element for removal by a conventional

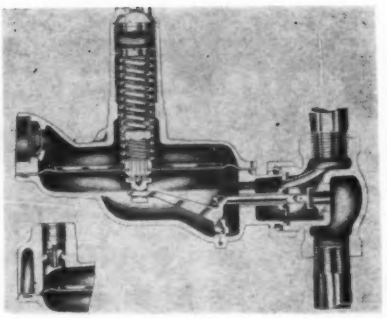


mist eliminator that can be furnished as an integral part.

Peco Air and Gas Filter. Perry Equipment Corp., Mineral Wells, Tex.

Swivel-Type Regulators — Rockwell

Two new 360-degree swivel-type models of the manufacturer's "173" gas service regulator can be installed in almost any position when equipped with a new 4-position side drain cover. The new models, for regular and high-pressure services, completely eliminate the need for special left and right hand assemblies and top or bottom inlet.



The new regular model has the same dimensions and performance characteristics as the conventional "173" and is still available with the large bottom vent or top vent cover. The internal relief valve is optional.

A swivel connection allows the regulator to rotate through 360 degrees without disassembly or removal from the line. It is only necessary to loosen the connection nut. When the desired angle is reached, another turn locks the assembly in place.

By removal of 8 screws, the 4-positional side drain cover can be moved to any one of 3 positions, making it possible for the regulator to vent and drain downward at all times.

The new high-pressure model offers maximum outlet pressure range of 10 psi and can be used in any application requiring a small capacity regulator with pounds outlet pressure range.

It is especially recommended for use with the "118" as a second or third stage regulator serving isolated consumers direct from high-pressure lines — or even as a primary regulator on belt and feeder lines where pounds outlet is necessary. It is also suggested for many industrial applications.

Four loading springs are available with outlet pressure ranges of 12"-to-1 psi, ½"-to-3 psi, 2"-to-6 psi and 5"-to-10 psi.

Swivel-type models of "173" regulator. Meter and valve division, Rockwell Manufacturing Co., 400 N. Lexington Ave., Pittsburgh 8.

Weed and Brush Killer — Du-Pont

A new, more concentrated, formulation of the company's "Ammate" weed and brush killer has been announced. The new formulation contains 95% active ingredient, ammonium sulfamate, instead of 80%.

The new product will normally be used at the rate of 60-lbs. per 100-gal. of water instead of 75-lbs. Containers are 60-lb. bags and 40-lb. fiber drums.

This weed and brush killer is recommended as a foliage spray for control of woody plants, and as a stump treatment to prevent resprouting. Utilities will find it applicable on rights-of-way to control brush. It is non-volatile, and it does not leave soil unproductive for long. It contains a corrosion-inhibitor, and is low in toxic hazard to people and animals when used as directed.

Ammate X. E. I. du Pont de Nemours & Co., Wilmington, Del.

Turn to page 46 for Additional Gas Industry Equipment News

GAS POWERED AIR CONDITIONER INTRODUCED IN TEXAS

A new summer gas air conditioner, which is said to operate for about one half the cost of electric conditioners, is being produced by Cobell Industries, Inc., Fort Worth, Tex. The conditioner, known as Cobaire, was invented by Thomas W. Carraway, Dallas thermodynamics engineer.

The first showing of a 3-ton unit was held for gas utility officials in Fort Worth recently and delivery of production models is scheduled to begin next month.

Production will be concentrated on 3-to-10-ton models but larger units will be available, L. D. Prescott, Cobell president, said.

These conditioners consist of a gas powered reciprocating engine and standard compressor, coupled by a centrifugal dry clutch. The engine engages the compressor after attaining approximately 1,000 rpm. Starting torque is reduced, permitting a smaller sized engine.

Gas costs for the 3-ton unit are estimated by the manufacturer at less than ½¢ per hour. With an outside temperature of 95F, the unit will use 55 cu. ft natural gas and 750 watts electricity per hour.

No maintenance is expected to be required during an average 2,200-hour cooling season, and full efficiency is contemplated for over 6,000 hours before needing minor overhaul.

Comparative Operating Cost Per Hour Three Ton Unit

	Outside Air Temperature			
Type of Unit	*95F*	*100F*	*105F*	*110F*
Cobaire gas air conditioner	5.5¢	5.7¢	5.9¢	6.0¢
Electric unit gravity water Tower	9.5¢	10.0¢	10.3¢	10.4¢
Electric unit air cooled Condenser	10.5¢	11.0¢	11.3¢	11.5¢

The operating costs are based on natural gas at 65¢/Mcf, domestic electricity at 2½¢ per kwh, and include operation of blower motor in duct system. Because water rates vary, this cost has not been included.

HAMILTON REVISES PARTS EXCHANGE

A new exchange policy for gas dryer control components has been announced by Hamilton Manfacturing Co. The new parts program enables Hamilton distributors to replace out-of-warranty gas dryer controls at a 40% saving. Seven gas dryer control items are covered by the new exchange program.

NATIONAL-U. S. RADIATOR IS NAME OF MERGER

National-U. S. Radiator Corporation has come into existence as a result of the merger of National Radiator Co. and United States Radiator Corp.

The merged corporation with general offices in Johnstown, Pa., will have combined net sales of over $50-million dollars and combined assets of approximately $28,-500,000.

W. C. McCord, president and director of U. S. Radiator, has been named chairman, National-U. S. Radiator Corp.

Theodore B. Focke, president of National, is president of the new corporation. L. L. Hotsenpiller, vice president for National's manufacturing, is now executive assistant to the president.

Carroll M. Baumgardner, vice president, National's sales, retains that position in the new corporation. Howard B. Steggall, formerly senior vice president and a U. S. Radiator director is now vice president, manufacturing, and a director of the new corporation.

ROBERTSHAW-FULTON WINS AWARD

For the second consecutive year, Robertshaw-Fulton Controls Co., Youngwood, Pa., division, received a Freedoms Foundation award. The George Washington Honor Medal was awarded to its employee publication, *The Robertshaw Symbol*.

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Couplings, Sleeves and Fittings . . .

- Save Time
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- Give Dependable Service

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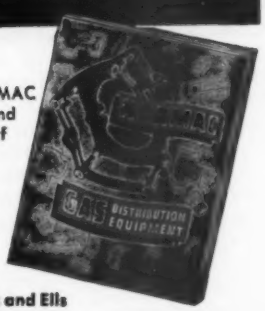
- Maximum Deflection
- Ease of "Stabbing"
- Complete Confinement of Rubber



Today, write for your free copy of this NORMAC catalog . . . complete with illustrations and specifications on the entire Normac Line of Couplings, Sleeves and Fittings. It's a profitable step in the cost-cutting direction.

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Couplings • Meter Bars • Sleeves
Cocks • Ball Joint Clamps • Service Tees and Ells

BTU CONTROL

provides two features
— no time lag
— low cost

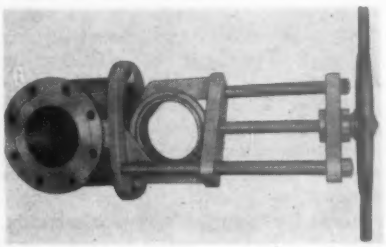
the BTU CONTROL, is a recent addition to the caloroptic line! Designed to provide modulated control for your motorized valve by varying the BTU up and down . . . thus maintaining the proper standard.

CONNNELLY, *Inc.*

Elizabeth, N. J. • Los Angeles, Calif.
3154 South California Ave., Chicago 8, Ill.

Line Shut-Off Valve—Hamer

This is a new valve which is described as incorporating the impenetrable sealing action of a line blind with the simplicity of operation found in a gate valve. It is designed to permit full-view visibility of the wedge at all times. Observation will determine whether the line is full-open or full-closed. Precision metal-to-metal fit of the wedge and seats, augmented by dependable



seal rings, are said to provide a foolproof line shut-off.

The valve seats are an integral part of the body; both wedge and valve seats have stainless trim, impervious to corrosion.

A feature noted by the manufacturer is that the operator has complete control of the wedge at all times; no lifting is necessary to reverse the wedge. The valve is described as rigid, with no line movement necessary to open or close. Hand wheel operation enables operator to open or close in less than a minute.

Hamer Visible Wedge. Hamer Valves, Inc., 2919 Gardenia Ave., Long Beach, Calif.

Electrified Card File—Remington-Rand

A new electrified rotary card index file has been developed for rapid reference and posting operations. It contains movable shelves which travel from either direction, bringing required tray to reference area either above or below, stopping at posting level by automatic leveling. The operator doesn't have to leave the unit, equipped with chair and posting board.

Automatic leveling, shorter crosswise trays, 2-directional carrier travel, and a rapid-action circuit system combine to give smoother, faster automatic filing with noiseless operations, the manufacturer states. A foot switch can be installed so that unit can be operated while the clerk has both hands free for work. A second piece of alternate equipment is a high-low operating switch which will bring one carrier of trays in center at convenient standing reference height. Another alternate is a push-button selector to get tray directly in front of operator.

Kard-Veyer. Remington Rand Inc., 315 Fourth Ave., New York 10.

SIDNEY C. REESE

Sidney C. Reese, a 39-year veteran with Perfection Industries, Inc., passed away April 6 at the age of 59, in St. Luke's Hospital, Cleveland, following a short illness.

Mr. Reese joined Perfection Stove Co., in 1916, as a rate clerk in the traffic department. In 1933 he transferred to the furnace sales division and, at the time of his death, was assistant to the sales manager of that division.

Several months before his death, Mr. Reese prepared a brochure on "comfort" for his company. Now in its second printing, the brochure has already been read by more than a half million persons.

MEN at Work

RUSSELL E. MINGES has been appointed economic analysis supervisor, market research department, *Whirlpool Corp.*

KENNETH V. OLSON is now Kansas City district sales manager, *Servel, Inc.*

VINCE REYNOLDS has been appointed southwestern sales representative, *A-P Controls Corp.*

CHARLES E. ALTMAN has been appointed district superintendent, *New York State Natural Gas Corp.*

ROBERT L. BORCHARDT is now assistant manager, technical information center, *Motorola, Inc.*

NORMAN D. BRADLEY was appointed industrial relations manager, *Consolidated Natural Gas System.*

DONALD E. DIXON has been assigned field engineer, *Cooper-Bessemer Corp.*

DR. E. E. DONATH was appointed manager, technical appraisal and planning section, *Koppers Co., Inc.*

FRED C. EGGERSTEDT, JR., was elected assistant vice president, *Long Island Lighting Co.*

EDWARD EMERSON, JR., has been appointed personnel director, *New York State Natural Gas Corp.*

STUART B. EYNON is operations manager, leakage control surveys, *Heath Survey Consultants, Inc.*

CHARLES A. HEATH is now vice president, director of engineering-operations, *Heath Survey Consultants, Inc.*

JOHN B. HUMPHREY, JR., has been promoted to Oklahoma City manager, *Black, Sivalls & Bryson, Inc.*

SUMNER LADD is now manager, industrial controls division, *General Controls Co.*

J. H. LOOMIS has been appointed St. Louis manager, *Worthington, Corp.*

RICHARD S. MAXWELL has been promoted to district credit manager, *Ohio Fuel Gas Co.*

STUART E. MCMURRAY has been elected a director, *Peoples Natural Gas Co.*

ROY H. OLSON has been appointed engineering director, communications and electronics division, *Motorola, Inc.*

ANDY SHAW has been appointed Sherman, Texas, branch manager, *Black, Sivalls and Bryson, Inc.*

JOHN E. STUCHELL was named district superintendent, *New York State Natural Gas Corp.*

DR. GILBERT THIESSEN has been appointed assistant manager, research department, *Koppers Co., Inc.*

JOHN M. WILSON, chief engineer, design-development, Brown Instruments division, *Minneapolis-Honeywell Regulator Co.*

HOW A DOLLAR COMES AND GOES . . . At The Brooklyn Union Gas Co.

INCOME	Cents
Collectible from customers for gas consumed:	
Domestic	51¢
Domestic—house heating	19
Commercial	17
Industrial	9
Interruptible	4
	100¢
Earned interest, rents and income from other sources	—
	100¢

OUTGO	Cents
Purchased:	
Natural gas	19¢
Oil, supplies, advertising and other items	5
Employees received:	
Salaries and wages	31
Pensions, insurance, etc.	3
Federal, state and city governments levied in taxes	20
Set aside for depreciation of plant and equipment	4
Set aside for amortization of charges resulting from conversion to natural gas	5
Paid interest on bonds and other indebtedness	4
Set aside for stockholders	6
Balance added to surplus	3
	100¢

SALES CONFERENCE — *Continued from page 37*

current trade magazines, all men are constantly kept conscious of progress and development in the industrial field. There is also participation in any sales training program undertaken by company for all new business department salesmen.

Our commercial salesman is normally recruited from retail sales force or, in some cases, from customers service department, if he has shown an aptitude and desire for sales work. A good basic education is required, but not necessarily a college degree. The commercial sales manager will interview several candidates for vacancy and, of course, will give due weight to such obvious factors as appearance, personality and general attitude.

In training commercial salesmen, the AGA commercial school is used.

Commercial men are also given considerable reading matter. Weekly educational meetings are held and men also participate in training programs given by company for all salesmen.

The new commercial man is given a territory rather early, but at first is accompanied frequently by supervisor, who will show how and where to look for prospects, and how best to develop sales approaches and technique.

Continuity of training is of prime importance. Our company feels that its industrial commercial representatives should always be increasing their product knowledge and striving to improve their effectiveness in field by developing the best methods of approach and presentation.

Wilbert W. Selzer . . .

business promotion manager
Columbia Gas System Service Corp.

. . . said

A breakdown of total 1954 sales to our customers by class of industry is:

Glass	26.3%
Steel	21.1%
Ceramics	16.1%
Machinery and appliance	11.7%

The remaining 25% is made up of automobile and automotive parts, chemicals, food and kindred products, textiles, paper and allied products, gasoline and oil, and others.

This will give a general idea of where we stand in the industrial and commercial market.

In order to adequately protect and expand this market, our affiliated companies have 24 industrial sales engineers and 26 commercial sales representatives who regularly contact customers.

The recruiting and training of personnel for these departments is more exacting in industrial department.

The employee relations department has a specific program for recruiting college graduates, which leans heavily toward recruitment of engineers. However, all departments are now included in college recruiting program.

Periodically, all affiliated companies in the system are requested to submit a quota of kinds of technically-trained graduates for that recruiting season. Employee relations department informs each school of our desire to recruit on their campus during that season, and also, names the represenative who is assigned to make detailed arrangements, as well as do actual recruiting.

College placement departments are contacted regularly by recruiter and are supplied with sufficient literature about company. This department also is supplied with questionnaires noting kind of graduates required, desired length of interview, scheduling of interview, etc. The recruiter is qualified to give information about company and is prepared to answer questions relative to organization of the system, training programs for professional and technical employees, starting salary, wage progression increases, competitive aspects of promotional opportunities, general personnel policies and fringe benefits.

Students who have been interviewed are informed as to status of their application within 2 weeks after interviewing. Any offers of employment are made in writing and students are not expected to meet too close a deadline on accepting or rejecting a job offer.

The junior engineering training program in Columbia may be considered to have 2 successive phases, each filling a specific need in training and development of the engineer.

The first phase is devoted to orientation and familiarization of engineer with overall operations of Columbia and to determination of his abilities in various fields of those operations. By working in various fields during this first phase, engineer and supervisors are able to determine the field in which he is best suited and satisfied. As a general rule this phase of training requires up to 1½ years.

The second phase commences when engineer has been placed in certain type of work and continues throughout his career. If engineers are to satisfactorily fill positions of increasing responsibility, they must continually advance and broaden their knowledge of Company and Industry, in latest technical developments.

To assist in making best selection of Junior Engineers, all interviews must necessarily include thorough explanation that, because of versatile nature of engineering in gas industry, an engineer cannot rigidly follow his profession.

These ten points may be helpful in an engineer training program:

1. Because junior engineer may become easily discouraged with relatively simple and routine assignments during early part of training, his future opportunities within company must be continually impressed upon him.
2. Junior engineers must be impressed with fact that while opportunities exist, individual initiative and merit are basis for advancement.
3. Junior engineers should understand that training program is designed to satisfy all conditions and needs of company. Should they be more satisfied to perform routine work, such openings are available. If they desire to advance to top positions and have ability and experience to fulfill requirements of job, these opportunities are also available.
4. Until junior engineer has gained sufficient background in company to enable him to handle important projects, he must be kept on productive work in which he can see tangible results. This can be accomplished only by explaining work to point that he can see overall picture and end results. It must also be explained that relative importance of specific jobs may vary from day-to-day. A job on which he may have spent considerable time may be suspended abruptly in favor of job of more immediate importance.
5. No training program for junior engineers can be made productive without complete and proper understanding of supervisor. The supervisor must view program and its productivity from long-range viewpoint. In making assignments, supervisor must bear in mind that rapid completion of job does not allow junior engineer opportunity to explore and inquire into questions which may arise.
6. Essential part of program consists of periodic discussions between supervisor and junior engineers on type of work they prefer, personal problems, value to Company of new ideas they may have, etc. Discussions must be on basis that junior engineer will feel free to ask any questions.
7. Supervisor should always be ready to discuss ideas which junior engineer may have, even though idea may have been tried and found impractical.
8. Supervisor should, as practical, keep junior engineer cognizant of future plans of Company, even though such plans are subject to change.
9. Supervisors should not promote idea that "our company" is only place in the industry where engineer can advance. It should be made clear that as engineer gains knowledge and experience, he may be offered opportunities within indusry that Columbia is unable to offer him at that time.
10. In final analysis, supervisor must always remember that junior engineer is an intelligent person and deal with him as such even though his experience and ideas are quite limited.

The main source for industrial sales engineers is in this pool of junior engineers. When an engineer is being selected for industrial sales, it must be impressed upon him that he should decide to commit himself to industrial work indefinitely. A long period of on-the-job indoctrination follows before industrial sales engineers can be put on their own. This may take 5 years or more. He must become an engineer with flexibility and imagination; he must be sincere and able to convey that sincerity.

All this, of course, makes it necessary

DRAGNET
leak detector

detects and locates leaks on any pressure piping system in a matter of minutes!

PATENTS PENDING

Here's the newest time-saver in the industry! The compact, portable Dragnet Leak Detector will detect even the tiniest leak on any pressure piping system for gas, steam, water or refrigeration. Unique "bubble action" principle much faster than by using pressure gauge or manometer.

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SAFETY GAS MAIN STOPPER COMPANY INC.

523 Atlantic Avenue

Brooklyn 17, N. Y.

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that industrial sales engineers be well paid. Present salary scales are much too low throughout the industry, including in my company.

It is our policy to have all industrial and commercial representatives attend the AGA industrial school on a rotating basis. We also send representatives from both departments to leading manufacturing plants. After placement on the job, men are encouraged to be active in trade associations.

Our commercial representaives are, for most part, recruited from other departments within company; in many instances, this is a service man with sales ability. He need not be an engineer, in fact, he need not be a college graduate. It is important that he knows company policies and can inform our commercial customers intelligently about them. He must keep abreast of the commercial equipment market, and be a good consultant to our commercial customers.

Basically, commercial representative must be salesmen; industrial sales engineers must basically be engineers.

CAMBRIDGE GAS REDUCES RATES

A $37,000 annual saving for gas customers in Cambridge and Somerville, Mass., will result from reduced rates for general and non-domestic space ,heating service filed by Cambridge Gas Light Co. Effective May 1, these new rates bring the annual savings for Cambridge customers to a total of $164,000, since the arrival of natural gas.

MISSISSIPPI

Continued from page 31

trumpet speaker can be switched out of the circuit.

With the execption of 2 units, the entire radio system uses Motorola equipment. The new mobile units are 25-30w output transmitters and receivers using all-vibrator power supplies.

The mobile sets work interchangeably on 6 or 12v ignition systems, an important feature now that Mississippi Valley is adding more 12v cars and trucks to its fleet. Furthermore, use of identical equipment allows flexibility in transferring a vehicle from one district to another. Sets can be changed from car to truck, serviced and reinstalled anywhere without modification of any controls or connections.

Because the radio system is widely dispersed, Mississippi Valley Gas Co. has found it advantageous to leave all radio equipment installations in the hands of the manufacturer. We believe this is sound economics, considering the initial investment of equipping a radio shop and the distances a company-employed radio maintenance crew would have to travel. Motorola retains responsibility for the system's performance, doing the necessary work through its local authorized service stations.

By using a single contract covering equipment, installation and maintenance, we are able to budget our radio costs in advance and receive a single monthly billing.

After 2 years of operating with 2-way radio communication, Mississippi Valley Gas Co. regards radio as a very valuable tool. It pays its way, and as one district manager expresses it, "Knowing the radio is in there working lets us sleep easier at night."

BRASS

Continued from page 35

tional batch anneal, for 85-15 brass (85% copper, 15% zinc).

Control of grain size, by any annealing method, depends upon time-and-temperature. Batch annealing requires heating times running in to hours to bring the interiors of the coils to the annealing temperature, if overheating of the outer turns of the coils is to be avoided. This is represented in Figure 5.

For the finer-grained red brass, the temperature must be at approximately 800F, in batch heating. However, with a heating time of less than 10 seconds, the temperature in the continuous annealing equipment is at approximately 1,300F.

The accompanying table of physical properties includes the brass shown in the photomicrographs, and clearly demonstrates that it is now possible to secure improved ductility, in combination with fine grain size. Note also that uniformity of anneal, Rockwell hardness, has been improved.

PROPERTIES OF BATCH AND CONTINUOUS ANNEALED BRASS STRIP

	RED BRASS (85-15)		YELLOW BRASS (70-30)	
Property	**Batch**	**Continuous**	**Batch**	**Continuous**
Grain size, mm	0.020	0.010 max.	0.020	0.010 max.
Tensile strength, psi	46,000	47,000	56,000	45,600
Elongation, %	40	49	45	55
Rockwell, 30T	30 to 40	39 to 41	36 to 45	39 to 40

Customer's view of gas and gas equipment

We are in a position to state, after many months of operation, that the experiment has proven successful. Fuel and maintenance costs have been reasonable, and a gratifying customer-demand has developed for the new product.

Gas has been employed in our plant for a number of years for comfort heating, steam generation, prepared atmospheres and as furnace fuel, and we believe that we have gained from its use. We hope that utilities and equipment manufacturers will continue to bring us new processes to improve our products and reduce our costs.

COURT RULINGS

Continued from page 40

period within which an injured employee, who intends to collect compensation, must notify his employer of an injury and submit to an examination. The higher courts consistently hold that failure of an employee to abide by these laws automatically forfeits his right to recover compensation under Federal or state compensation laws. However, circumstances may exist under which the courts will imply that the employee conformed with the notification law.

For illustration, in Keller v. Anderson Company, 291 N. W. 32, it was shown that an employe claimed to have injured his back August 20. In subsequent suit the employee testified that he notified Mr. Peterson, his foreman, on September 10 of his injury and that Peterson sent him to Mr. Anderson who gave him an order to consult Dr. Brock; that Dr. Brock refused to examine his back; that on October 3, he was examined by John W. Troester, representing the employer. This examination was almost 3 months after the employee claimed to have been injured. Therefore, it was contended that the employee was not entitled to compensation because he delayed for an unreasonable period of time before submitting to an examination. Notwithstanding this contention the higher court held the employee entitled to compensation, and said:

"We think the testimony of plaintiff that he went to Peterson and by Peterson was sent to Anderson who sent him to Brock, and that Brock refused to treat him for the injuries to his back, followed by the statement of Mr. Troester that he represented the Anderson Sand and Gravel Company, is sufficient evidence on the question of notice. . . . Based upon the facts, this case presents the picture of a man who, prior to the accident, was able to do any and all types of work, and thereafter the symptoms of which he now complains developed and progressed to a point where it became impossible for him to do the type of work which he had previously been able to do."

For comparison, see the leading case of Doehoff v. Globe Construction Company, 212 Mich. 166. This court said:

"The provisions of the act directing the manner and fixing the time in which the injured party must proceed to establish his right to an award set the statute of limitations in plain terms They are not open to variations by judicial construction. Plaintiff's (employee's) claim for compensation was not made upon his employer within 6 months from the date of the alleged accident."

In this case the employee delayed more than 6 months after the alleged injury before he filed a claim for the injury. There was no evidence that the employee had previously made any effort to file his claim or induce his foreman or supervisor to do so. Hence the higher court refused to award the employee any compensation.

And again in Sweet v. Gale Company, 289 N. W. 111. Here it was shown that a state law required injured employees to notify the employer of an injury within 10 days after occurrence of the injury. An injured employee failed to notify the employer of his injury but he notified the state compensation insurance department within the 10-day period.

In subsequent litigation, the higher court held that the employee was not entitled to receive compensation, and said:

"Plaintiff (employee) seems to take the position that notice of an accidental injury to an insurer constitutes notice to the employer as required by the laws. The claim is erroneous."

This higher court clearly explained that under ordinary circumstances state compensation laws are strictly construed.

Variations of law

While the various states have enacted compensation laws which award compensation to employee for injuries, yet gas companies may be liable to injured employees for damage, notwithstanding the state compensation laws.

Many courts have consistently held that a state has a lawful right to provide compensation for employees, if the enacted laws are not valid the employer may be liable in damages, if the injury resulted from his negligence. Also, if the compensation laws provide for payment of compensation for "accidental" injuries, employees who contract occupational diseases may not recover compensation and therefore, the employer, is not protected against damage suits by employees who have occupational diseases.

Other higher courts hold that federal, state compensation laws, and insurance policies which use the words "bodily injury" are intended to compensate for employees for either injury or disease caused by external violence. Therefore, in order that an employee may obtain compensation under an insurance policy, or law, insuring against "bodily injuries" caused directly, solely and independently by accidental means, the employee must prove that some external, violent and accidental force caused the injury.

On the other hand, some courts have held that it cannot be doubted that persons are "bodily injured" by drinking of water in the course of work if it contained disease germs. This is so because the definitions of the word "accidental" in most dictionaries is "the happening of something unexpectedly, unintentionally."

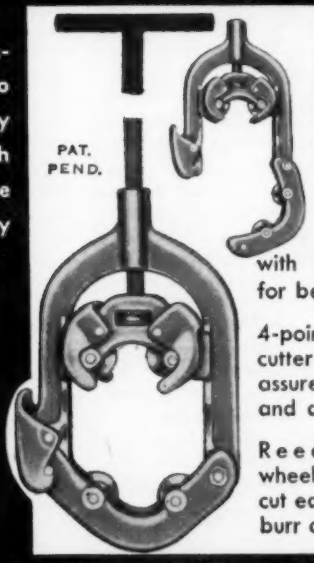
Also, see the leading case of Insurance Company v. Portland, 221 Fed. 552. In this case the higher court allowed an employee, who held an accident insurance policy, compensation for a disease contraced by drinking polluted water, saying:

"Suppose, instead of containing typhoid germs, as in the present case, the water that the employees of the assured consumed had contained some of the most virulent poisons, would any one contend that the injuries resulting therefore could not be properly held to have been 'accidentally' inflicted?"

And, in Campbell, 1 K. B. 328, 337, the court held that an employee was entitled to compensation, under an "accidental" clause where he contracted a disease from infection while at his regular work.

IF YOU CUT LARGE DIAMETER PIPE...
YOU NEED THESE
New REED HINGED 4-WHEEL PIPE CUTTERS
Four sizes cover the range from 2½" to 12"

Users tell us these completely new cutters are so efficient they often "pay for themselves" through the savings in crew time on a half-dozen cuts. They are the first really practical tools for cutting off steel or cast iron pipe in sizes from 2½" to 12". You can, for example, cut 8" steel pipe completely off in less than five minutes.



Four wheel design requires minimum swing of handle—less digging in ditch work, easier "tight-corner" cuts.

Closed frame permits light weight with complete rigidity for better cutting.

4-point guide aligns the cutter on the pipe . . . assures perfect tracking and a right angle cut.

Reed Razor Blade wheels track perfectly, cut easily and roll down burr on steel pipe.

Unconditionally guaranteed to be the most efficient cutter you have ever used. Ask your jobber or write for literature.

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THE GAS JOURNAL

11, BOLT COURT, FLEET STREET
LONDON, E.C. 4

Dear Mr. Carlson

It was with great interest that I heard of the recent change in the management of AMERICAN GAS JOURNAL and I feel I cannot let the occasion pass without conveying to you my sincere wishes for the continuing and expanding prosperity of your publication.

We, at this side of the Atlantic, follow your issues closely and, through their pages, are able to maintain a concise overall picure of events and trends in the American Gas Industry. I have no doubt that, henceforth, under the ownership of the Petroleum Engineer Publishing Company, AMERICAN GAS JOURNAL will go from strength to strength in its chosen task of informing the gas utilities of your country.

As the only paper which is your senior in years, GAS JOURNAL, with its 107 years of service to the British Gas Industry behind it, sends its heartiest salutations to you and looks forward with you to the celebrtaion of your Centenary in four years' time.

Yours sincerely,
Trevor G. Williams
EDITOR

T.G.W. — It was with no small sense of having been honored, that we received your thoughtful expression.

Indeed, we shall expand our efforts to inform American gas utilities, during this period when the technologies of gas distribution and utilization are advancing at such a rapid rate.

The two most recent editors of AMERICAN GAS JOURNAL often have doffed their hats, in most respectful recognition of views expressed by their British cousins, in THE GAS JOURNAL. The problems of our two industries, the attempts at solutions and the results seem notably similar, at times.

Most appropriate, in this first exchange of correspondence, is our expression of the best of good wishes for you, your staff and your book. And, in this instance at least, we shall represent our gas utilities with a cheery salute to the British utilities. — H.H.C.

ROCKWELL CHANGES SUBSIDIARY NAME

Rockwell Manufacturing Co. has changed the name of its Canadian subsidiary, Callander Foundry and Manufacturing Co., Ltd., to Rockwell Manufacturing Co. of Canada, Ltd.

who is this guy?

This is the man who makes the fabulous Southwestern petroleum industry tick! Whether he's doing a rough and rugged job in the field . . or whether he has come up through the ranks to the presidency of his company . . he's a sort of composite spirit of the men who drill for and produce oil and gas.

Joe Roughneck is the No. 1 boy in the great Mid-Continent region where 75 per cent of the nation's crude oil is produced. To help him do a better job, Lone Star's completely integrated steel mill was built right in the middle of Joe's workshop, and today, Lone Star is turning out API casing, tubing and line pipe for his special convenience in getting the job done!

Neighbor, wherever you are . . specify Lone Star and we both get a good deal!

Lone Star STEEL COMPANY

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Continue High Prospect for Utilities

• WITH PEOPLE all over the country speaking of a construction boom, an April survey of the 14 Southern Gas Association states shows that the southern area is sharing a high place in the tide.

By the barest of margins it failed to equal the percentage gain shown in the larger 37-states Dodge Reports area. In totals of contract awards for future construction in the 14 states, the grand total was 33% ahead for the first 3 months as against the same period of 1954. The 37 states east of the Rockies covered by the F. W. Dodge news organization showed a gain of 34%.

In the residential classification, which always attracts more attention than any other category, the South was slightly ahead of the 37-state level. The first quarter was 52% ahead of the first quarter of 1954, while the 37-state figure was only 48% ahead.

Every one of the 14 states showed a substantial gain in residential contracts. Arkansas, Mississippi, and Tennessee doubled the 1954 figure. South Carolina almost doubled.

Strategically placed members of the Dodge construction news staff were questioned and asked for comments on their areas. These men are in closer touch with construction projects and trends than anyone else, because they are in the business of reporting project by project.

All Dodge managers reporting hold the general opinion that 1955 final totals would be up from last year's, in all classifications. The only exceptions were that same-as-last-year was predicted for heavy engineering construction in Virginia and in the area of Georgia, Alabama and Florida.

The general tone of comment was optimistic not only as to the trend of the rate of construction activity, but as to the part that gas will play.

GEORGIA: The Southeast

by Mack Harmon, Atlanta.

As in recent years, the number of reported gas line projects continues upward, indicating that the use of gas certainly will increase again during 1955. Gas use has increased and continues to go up.

Without question, the number of schools and churches are the 2 most important features of construction in this area. The State School Building Authority for Georgia continues to go ahead full blast and other states in this area are also continuing their school building programs. Churches of all denominations apparently are growing in numbers, consequently construction of churches must be considered as a feature in this area.

There seems to be no doubt that all-year air conditioning is here to stay. In fact, we now ask if air conditioning is involved in public and semi-public buildings, such as office buildings, churches and hospitals. We ask for this information as a basic question when obtaining reports from architects and other sources of information.

TENNESSEE

by Dixon Gaines, Jr., Memphis.

Tennessee is enjoying its best year ever in volume of construction, and 1956 promises to be even better. To me the most sriking feature of the first quarter of this year is the sheer increase in the residential classification; more than doubling the figure for last year.

As for gas in the future, I won't say that it will increase, but I certainly say that it will not decrease. Air conditioning went up again since this survey was made a year ago.

More moderately priced homes are being converted to year-round air conditioning, to help swell the total of home owners using this great boon to life in the South.

MISSISSIPPI

by James R. Jones, Jr., Jackson.

Most people with whom I have talked are very optimistic about the volume of construction in Mississippi in 1955. Most everyone thinks this is going to be a big year and many think it will be the largest ever for Mississippi.

I think that the most unusual feature of construction activity in Mississippi is that even though we are building at a record volume, we are *not* catching up, but are probably falling further behind. The needs for new schools, churches, hospitals, homes, streets, and roads, as well as many of the other construction categories, are increasing with such rapidity.

The installation of all-year air conditioning has become almost a must in all moderate- to high-cost residential buildings, as well as most commercial construction. Consequently, the field of all-year air conditioning has experienced unprecedented expansion.

OKLAHOMA

by B. W. Querry, Oklahoma City.

All construction in Oklahoma continues at an all-time high, and will continue to increase over 1954 unless something unforeseen happens. Residential building is not suffering curtailment by FHA, as it is in other states, and continues to boom. Contracts for additions to new schools are being awarded before previous contracts are completed. Nonresidential building continues to increase, trying to compete with demands for new and additional space.

Contrary to all economic trends, as the volume of construction increases in Oklahoma, prices are decreasing. Never before have contractors attempted to do the volume of work they are now doing, and at such a small margin of profit. This is true not only among general contractors, but subcontractors as well. Owners seem to be the ones being most benefitted by this situation.

Use of gas in Oklahoma is increasing due to the record residential and nonresidential building and will continue to increase as long as this situation exists. Although cooking by electricity and increased use of air conditioning has made some inroads on

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Gas Industry CALENDAR

MAY

1-4 LPGA convention, Conrad Hilton Hotel, Chicago.
2-3 PCGA transmission conference, Palm Springs, Calif.
2-6 AGA industrial gas school, Hotel Wm. Penn, Pittsburgh.
5-7 Florida-Georgia Gas Association, annual management conference, Key Biscayne Hotel, Miami.
9-10 AGA gas supply, transmission, storage conference, Hotel Wm. Penn, Pittsburgh.
9-13 National restaurant exposition (AGA exhibit), Navy Pier, Chicago.
12-13 PUAA, Sheraton Hotel, Chicago.
16-18 SGA 47th annual convention, New Orleans.
17-19 Pennsylvania Gas Association, Pocono Manor, Pa.
18 PCGA non-residential sales clinic, Los Angeles.
19 PCGA residential sales clinic, Los Angeles.
23-24 AGA residential section, N.Y.-N.J. sales conference, Hotel Commodore, New York.
23-25 AGA chemical, engineering, manufactured gas production conference, Hotel New Yorker, New York.
31 AGA board of directors, The Homestead, Hot Springs, Va.

JUNE

1-3 SGA short course in gas appliances, University of Tulsa, Tulsa, Okla.
5-9 Canadian Gas Association, annual meeting, Sheraton-Brock Hotel, Niagara Falls, Ont.
9-10 Natural Gas and Petroleum Association of Canada, Royal Connaught Hotel, Hamilton, Ont.
27-28 Michigan Gas Association, Mackinac Island, Mich.
28-July 1 American Home Economics Association, Minneapolis.

JULY

18-Aug. 13 Southeastern Gas Association, short course in gas technology, Raleigh, N. C.
18-22 Western summer appliance market, Merchandise Mart, San Francisco.
29 AGA board of directors, Denver.

AUGUST

15-Sept. 10 Southeastern Gas Association, short course in gas technology, Raleigh, N. C.
29-31 Appalachian gas measurement short course, West Virginia University, Morgantown.

SEPTEMBER

7-9 Mid-West Gas Association, school and conference, Iowa State College, Ames.
9 New Jersey Gas Association, Hotel Monmouth, Spring Lake.
11-13 INGAA, annual membership meeting, Jasper Park Lodge, Jasper National Park, Alberta.

OCTOBER

12-14 GAMA annual meeting, El Mirador, Palm Springs, Calif.
17 AGA board of directors, Los Angeles.
17-19 AGA-PCGA joint-convention, Los Angeles.
17-21 National metal show (AGA exhibit) Philadelphia.
24-26 Pacific Coast restaurant convention, Biltmore Hotel, Los Angeles.
24-27 National Association of Railroad & Utilities Commissioners, Asheville, N. C.

NOVEMBER

7-11 National Hotel Exposition, Kingsbridge Armory, New York.
13-18 ASME, Congress and Hilton hotels, Chicago.
14-17 API, San Francisco.
28-30 SGA advisory council and management conference, Point Clear, Ala.

JANUARY 1956

23-24 Industrial Heating Equipment Association, LaSalle Hotel, Chicago.

MARCH 1956

12-16 National Association of Corrosion Engineers, Hotel Statler, New York.
19-21 Midwest Gas Association, Omaha, Neb.
22-23 NEGA, annual meeting, Hotel Statler, Boston.

APRIL 1956

4-6 AGA general management section, conference, Conrad Hilton Hotel, Chicago.
16-18 National Conference of Electric and Gas Utility Accountants, Hotels Biltmore and Commodore, New York.
16-19 AGA sales conference on industrial and commercial gas, Hotel Roanoke, Roanoke, Va.
19-21 GAMA annual meeting, The Greenbrier, White Sulphur Springs, W. Va.

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